Interim Status Closure Plan

Northwest EnviroService Inc.
1700 Airport Way South Facility
Seattle, WA

December 1994

Revision #1—December 30, 1994

Christy Ahlstrom Brown

WA 7152
17a

NORTHWEST ENVIROSERVICE INC

December 29, 1994

Mr. Kevin Schanilec
RCRA Compliance Section
United States Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, WA 98101

SUBJ: Northwest EnviroService, Inc. Interim Closure Plan

Dear Mr. Schanilec:

This letter and attachments are being submitted in accordance with 40 CFR 265 and WAC 173-303-400 as notification that the Northwest EnviroService, Inc. facility, WAD 058367152 will be closing in 1995.

I look forward to receiving your comments on the enclosed interim status closure plan.

Sincerely,

J. Stephan Banchero

J. Stephan Banchero, Jr.
President

Attachments

cc: Sally Safioles, Ecology NWRO
William Hedgebeth, US EPA - TSCA Division
Jerry Bartlett, NWES

P.O. Box 24443 • Seattle, WA 98124 • 1700 Airport Way South • Seattle, WA 98134 • Phone 206-622-1090 / Toll-Free 1-800-441-1090

CONTENTS

FIGURES

TABLES

1. Interim Status Closure Plan

1.1 Introduction

This interim status closure plan has been prepared to describe the activities that will be undertaken to close the regulated units at the Northwest EnviroService (NWES) treatment and storage facility, located at 1700 Airport Way South in Seattle, Washington (Figure 1-1). The facility is arranged into 13 management and operational areas as shown in Figure 1-2. There are currently seven areas with regulated units consisting of tanks and/or containers at the facility and two areas used for container load/unload and staging. Remaining areas of the facility do not contain regulated units and will not have closure activities performed within them.

- **Area 1–North Yard**. The regulated units in the North Yard include three tanks (Tank EB, Tank WB, and the battery/characteristic waste shredder). These tanks will be closed along with the surrounding surface area used for staging waste containers and stabilized solids. The location and general layout of Area 1 are shown in Figure 1-3.

- **Area 2–Oil/Water Separator Tank Area**. The regulated units in Area 2 include the centrifuge and four tanks (C-1, C-2, 60-C, and 60-E). These units will be closed along with the loading and unloading area located to the west. The location and general layout of Area 2 are shown in Figure 1-4.

- **Area 5–Batch Wastewater Treatment Area**. The regulated units in Area 5 include 9 tanks (PE-1, CP-13, CP-67, CP-68, CP-69, CP-70, CP-72, and CP-74) and the red filter press. These units will be closed along with the batch tank container and the small-container processing area located northwest of Tank CP-67. The location and layout of Area 5 are shown in Figure 1-5.

- **Area 6–Bulk Corrosive Base Storage Area**. The regulated units in Area 6 include two tanks (CS-42 and CS-61). The location and layout of Area 6 are shown in Figure 1-6.

- **Area 8–Container Storage Area**. The Container Storage Area (for 55- and 85-gallon-capacity steel drums) includes the covered and exterior storage area, located along the east boundary of the facility (see Figure 1-7).

- **Area 9–Container Staging Area**. This area is used for staging and repacking drummed wastes and is shown in Figure 1-8.

- **Area 10–South Tank Farm**. The regulated units in Area 10 include eight tanks (S-1, S-2, S-3, S-4, S-5, S-6, S-7, and S-8). The location and layout of Area 10 are shown in Figure 1-9.

NPE35409.03 / 1-1 Site Vicinity / CJS

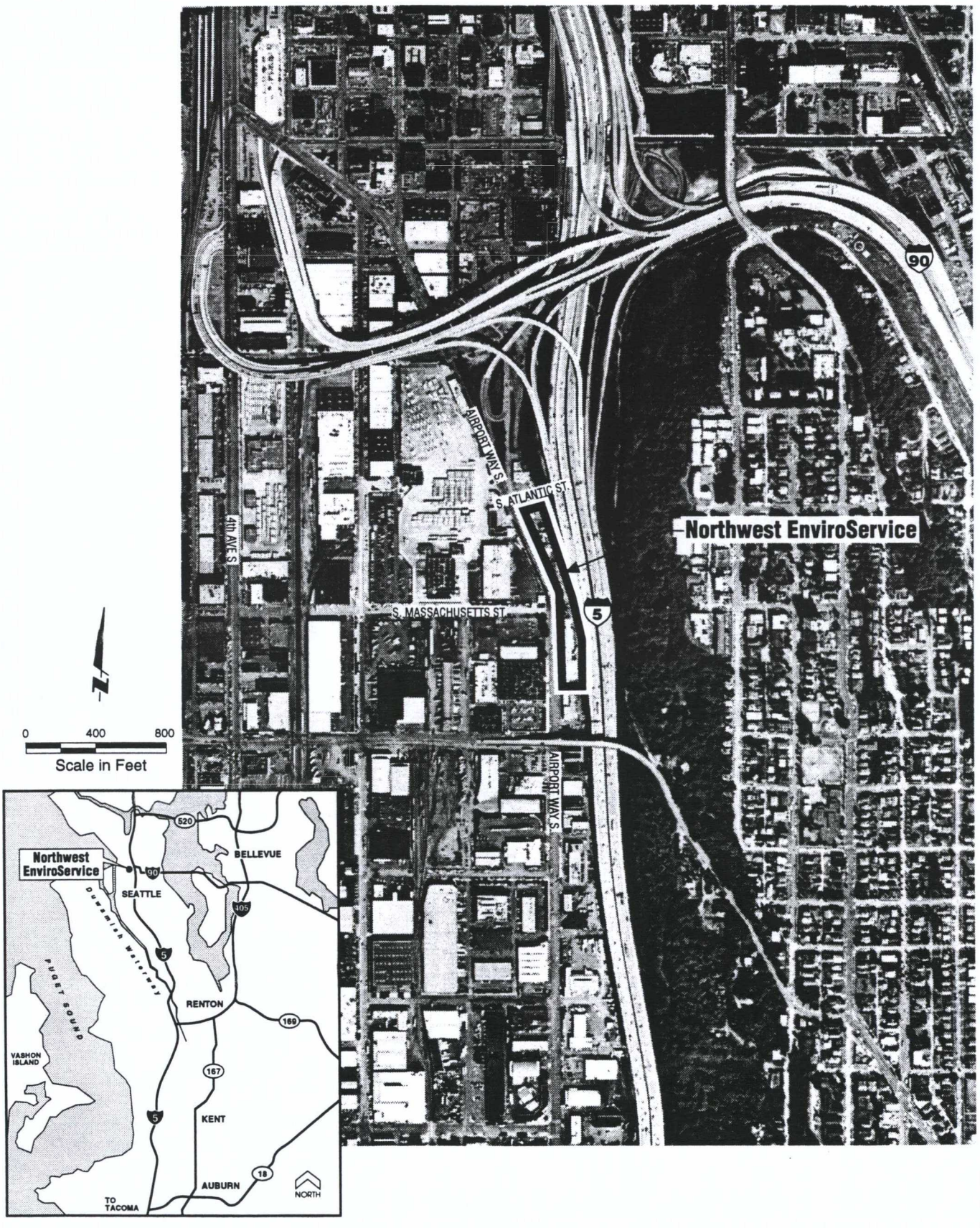


Figure 1-1
Location of Northwest EnviroService Treatment and Storage Facility

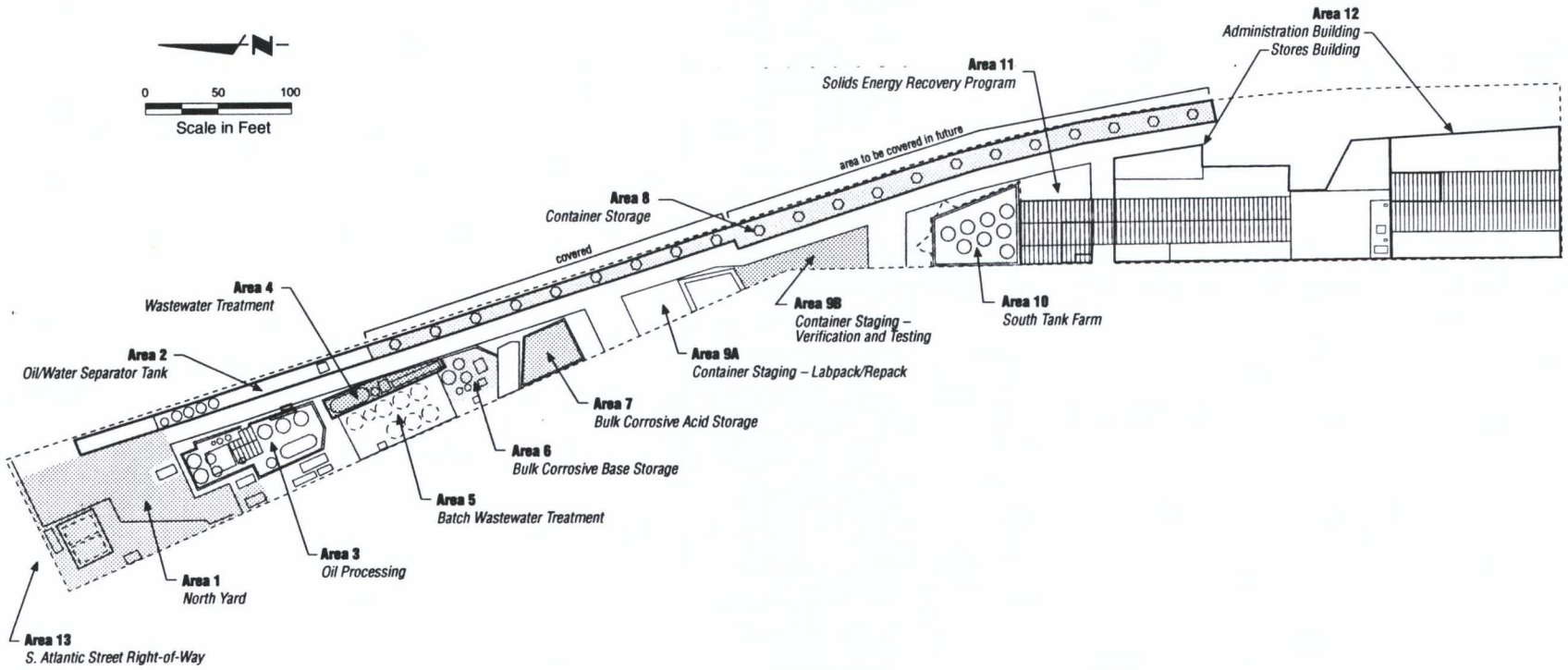


Figure 1-2
Facility Operational Areas

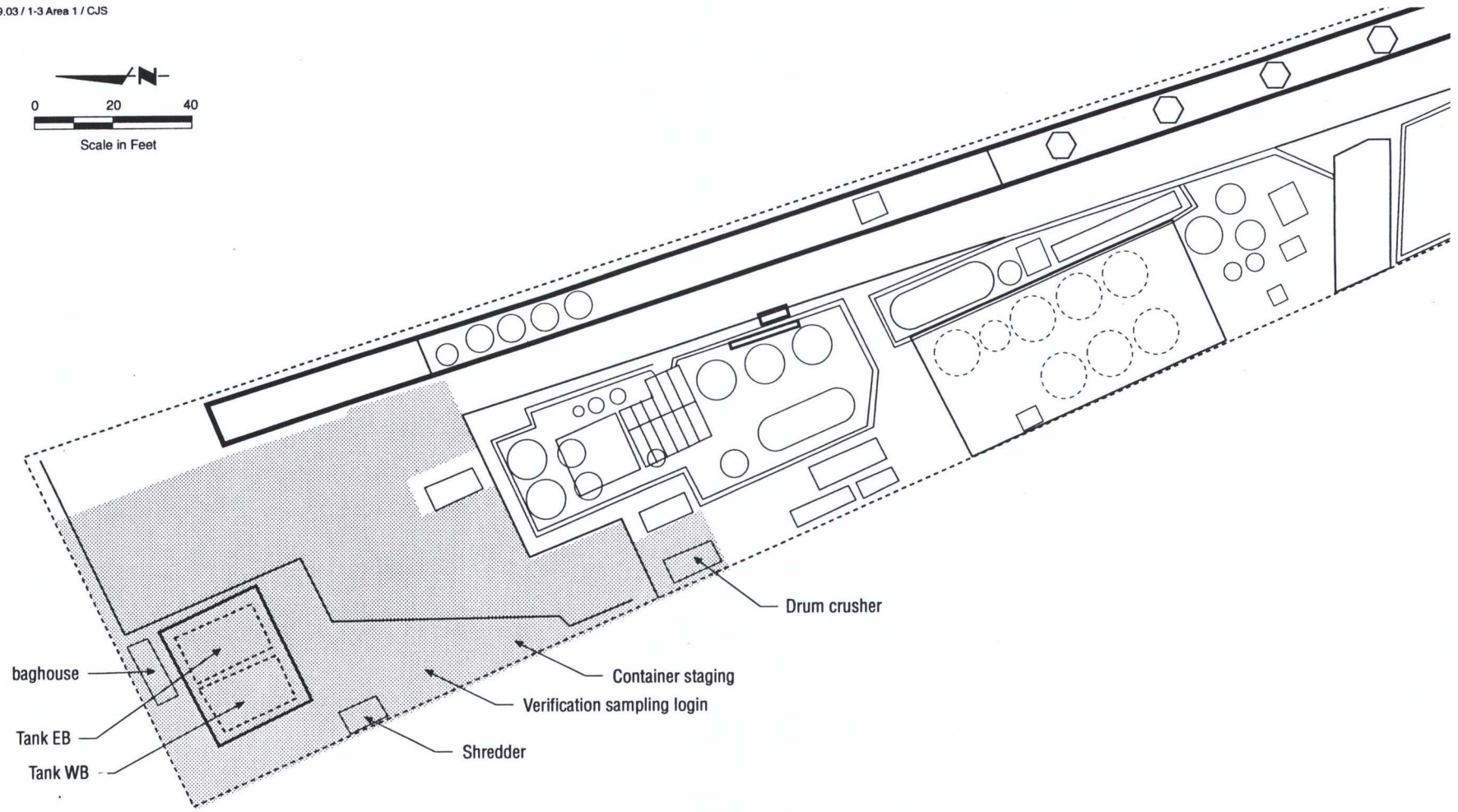


Figure 1-3
Area 1 – North Yard

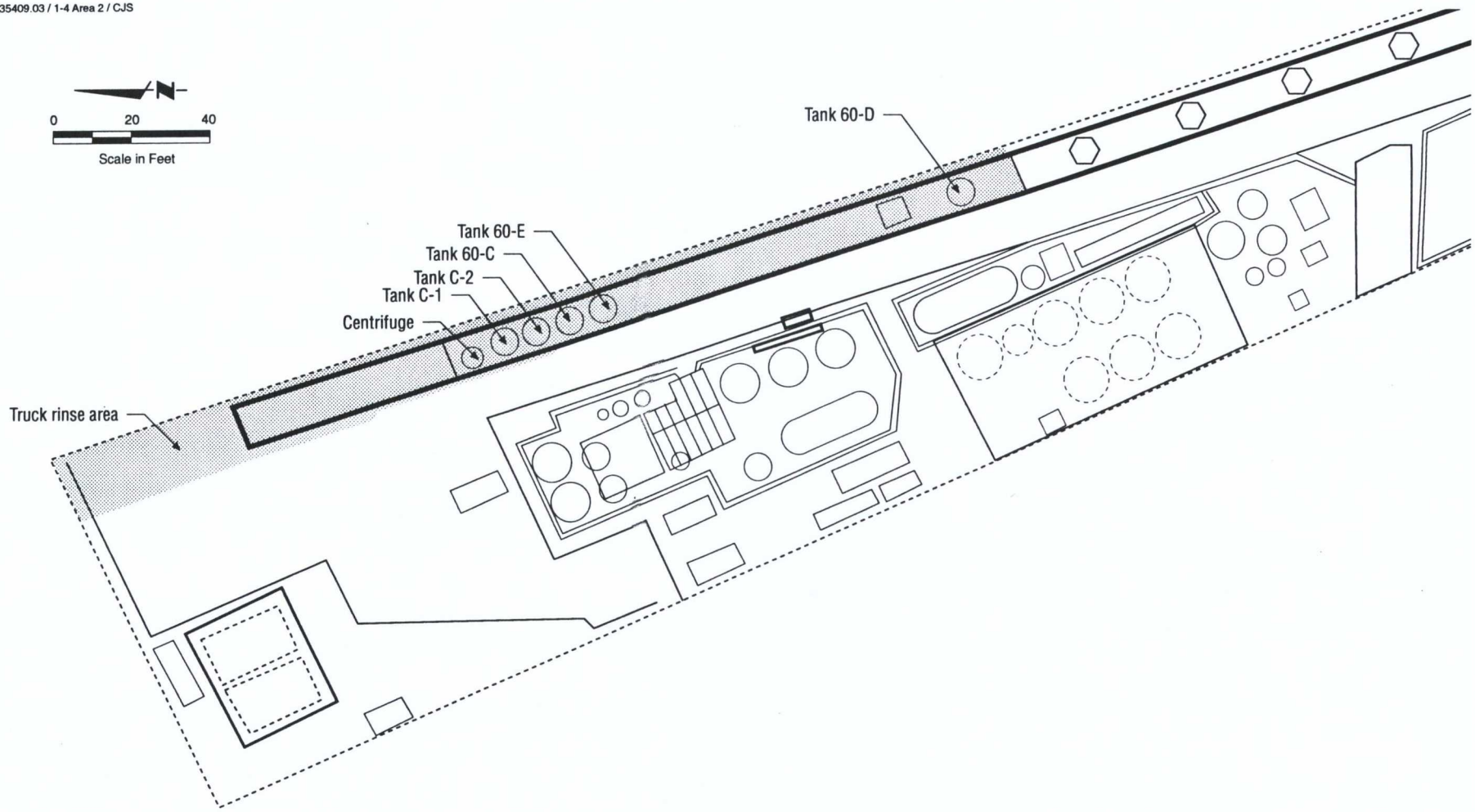


Figure 1-4
Area 2 – Oil/Water Separator Tank Area

NPE35409.03 / 1-5 Area 5 / CJS

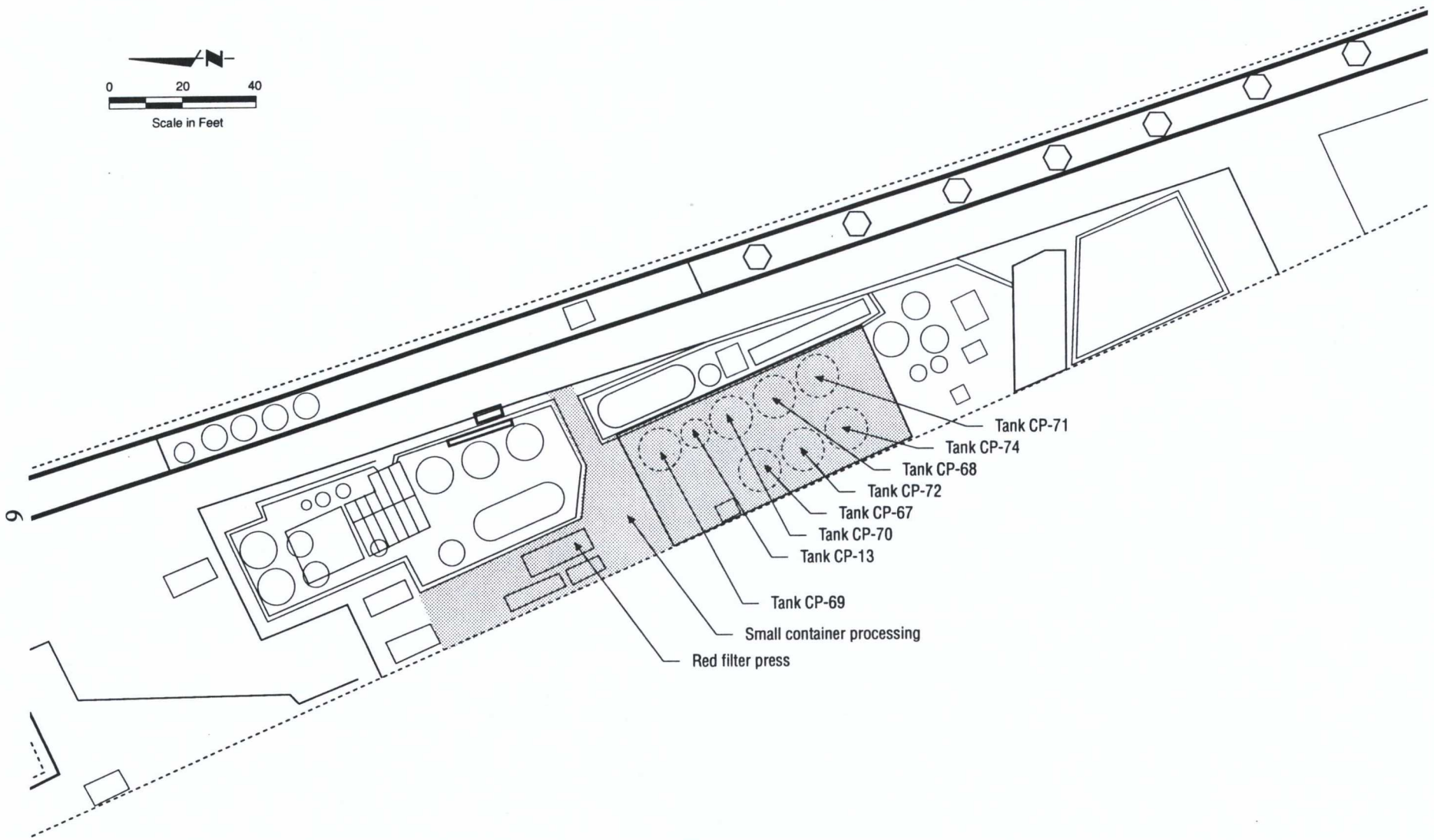


Figure 1-5
Area 5 – Batch Wastewater Treatment Area

NPE35409.03 / 1-6 Area 6 / CJS

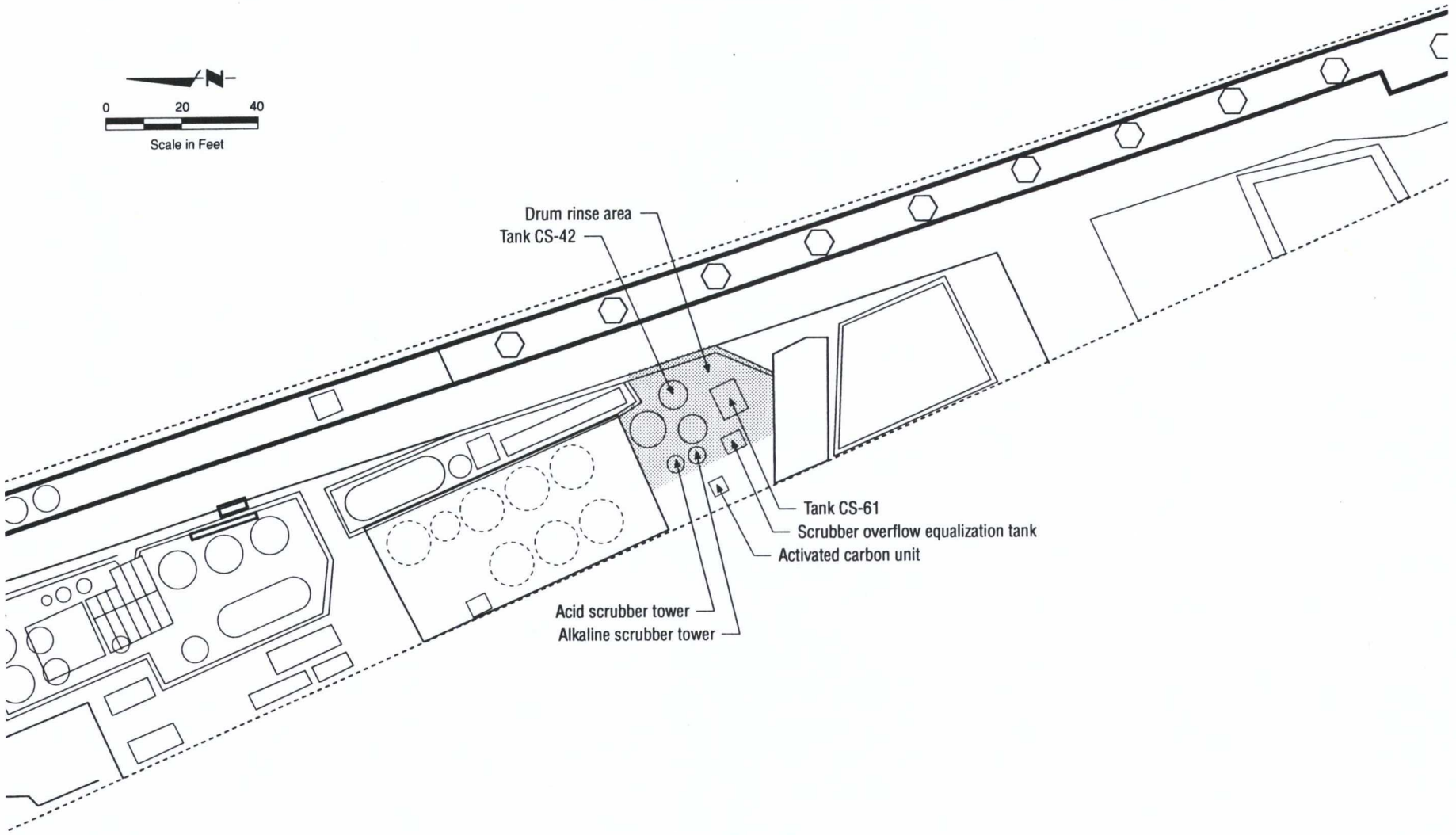
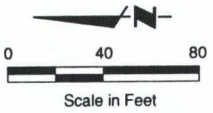


Figure 1-6
Area 6 – Bulk Corrosive Base Storage Area

NPE35409.03 / 1-7 Area 8 / CJS



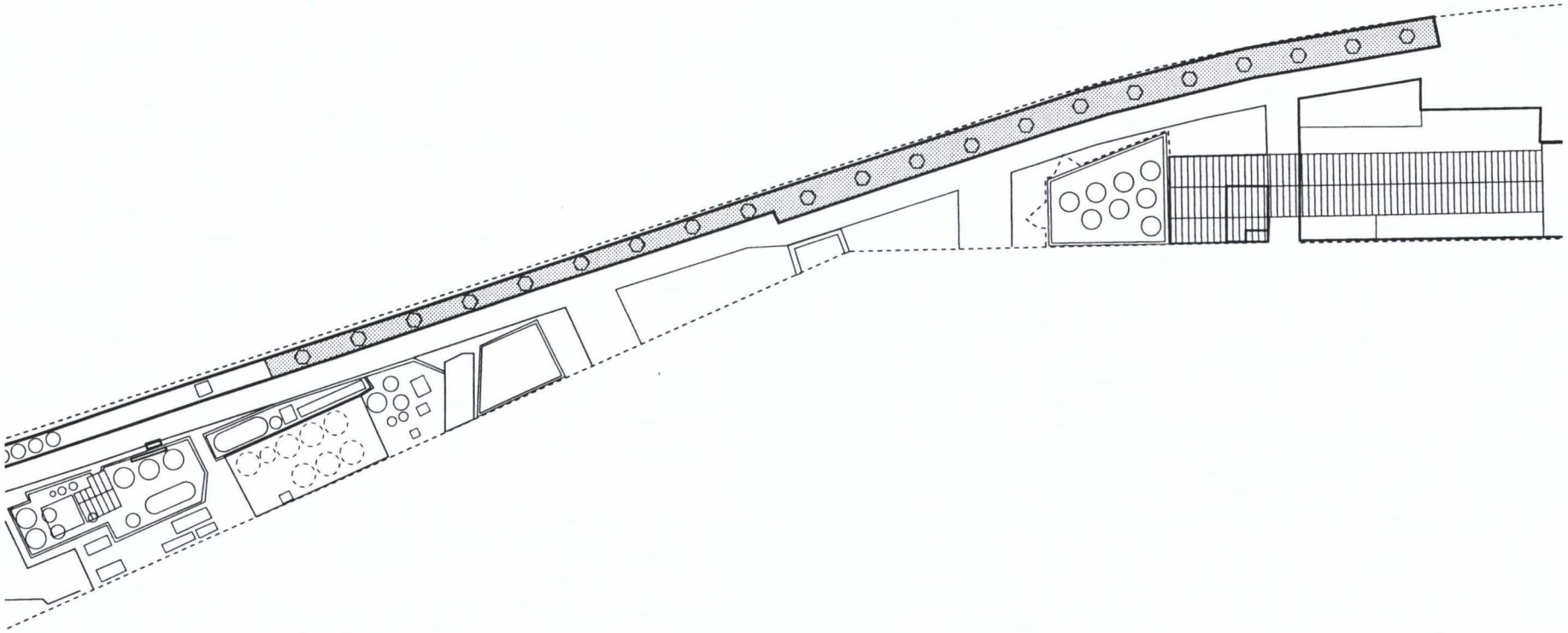


Figure 1-7
Area 8 – Container Storage Area

NPE35409.03 / 1-8 Area 9 / CJS

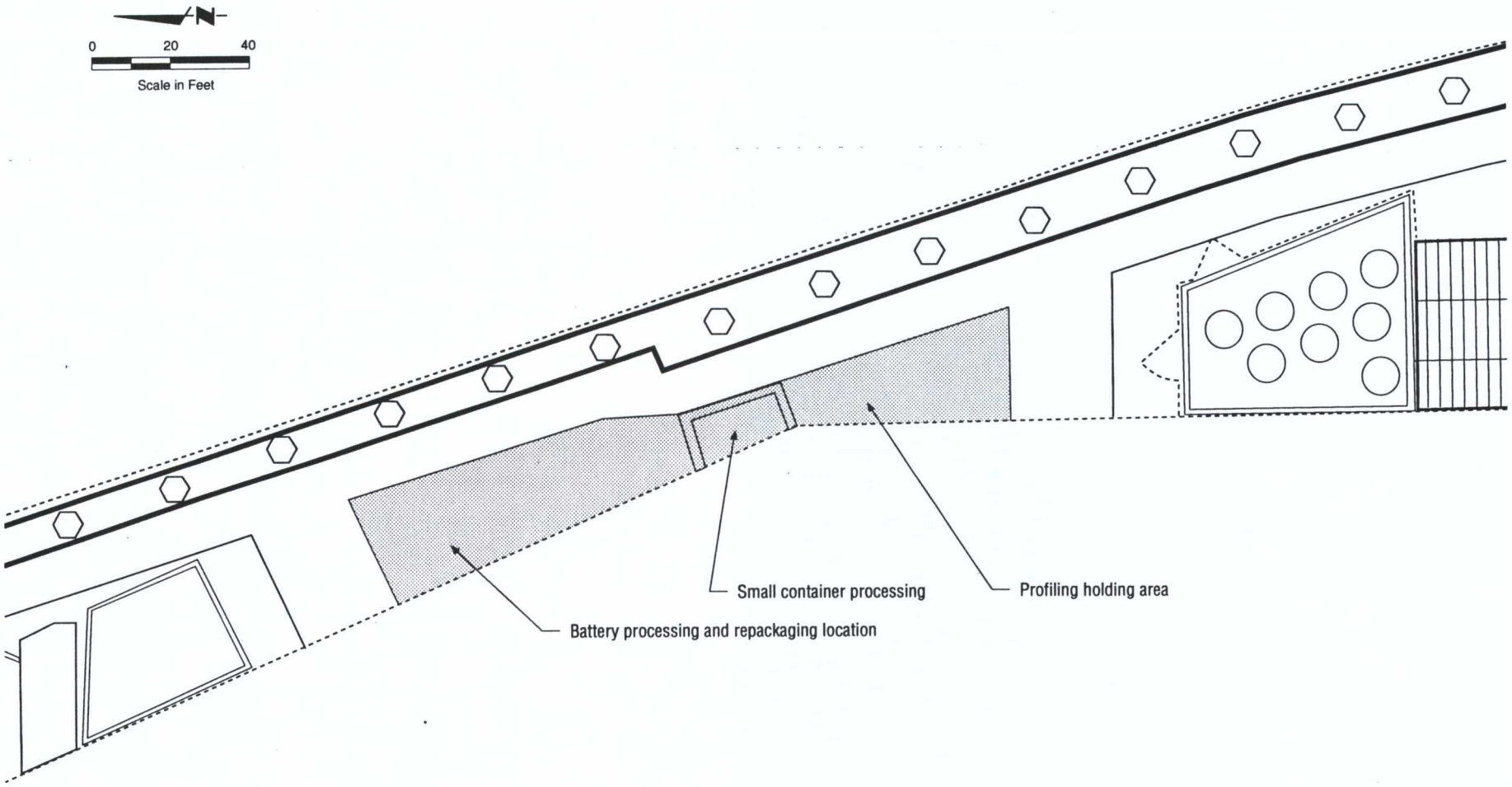


Figure 1-8
Area 9 – Container Staging Area

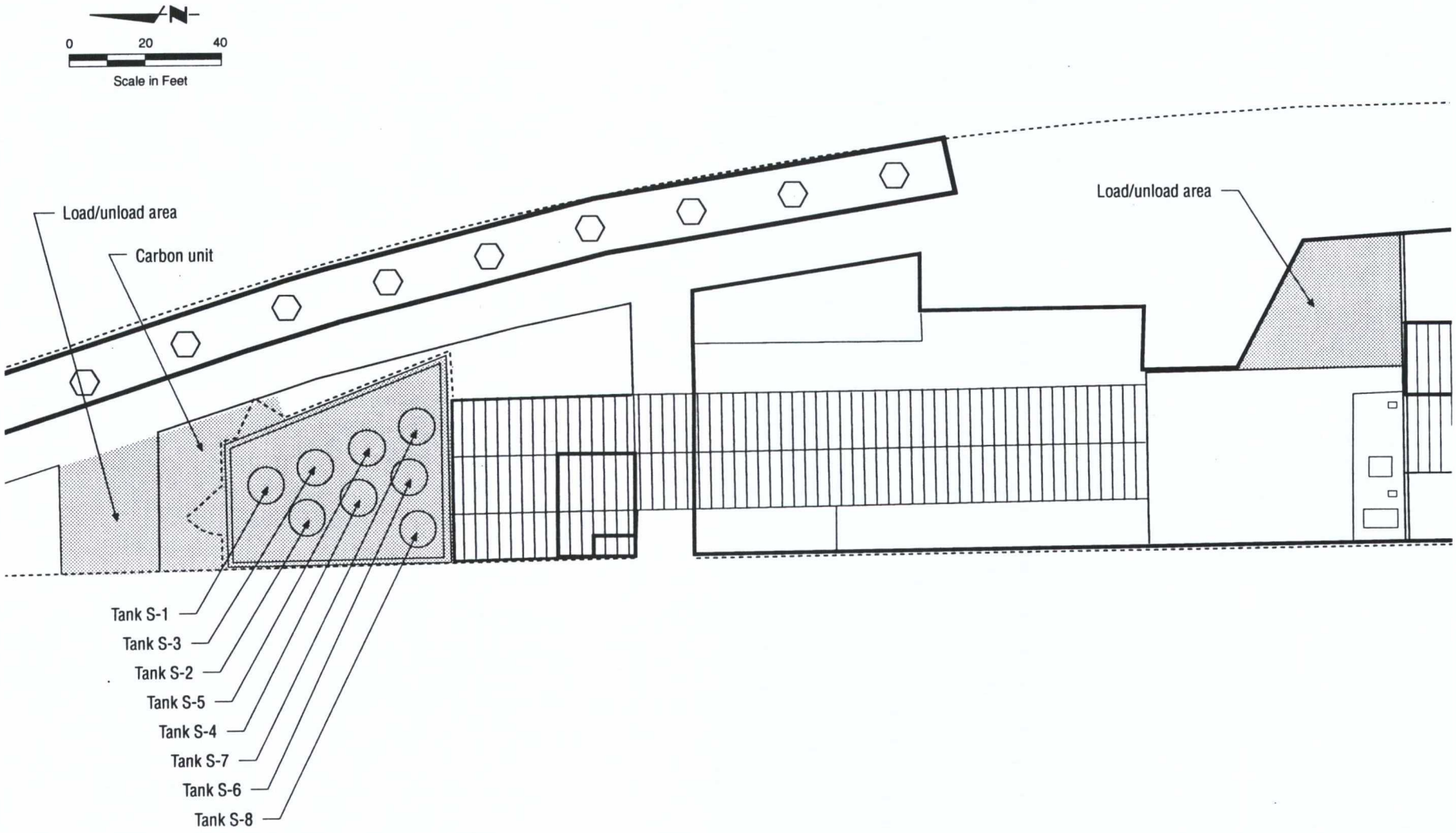


Figure 1-9

Area 10 – South Tank Farm
Area 12 – Administration and Stores Buildings Area

- **Area 11–Solids Energy Recovery Program Area**. The regulated unit in this area is a tank (a solvent rag baler). Figure 1-10 shows the location and layout in Area 11.

- **Area 12–Container Load/Unload Area.** This area is used for receiving containerized wastes from transporters. The location and layout of Area 12 is shown on Figure 1-9.

The NWES facility will undergo final closure in 1995. The facility property will be converted to nonhazardous waste operations. Most equipment and structures will remain on the property.

NWES intends to clean-close the facility: at completion of closure, no hazardous wastes or constituents will remain in or about the regulated units. This interim status Closure Plan contains information necessary to undertake clean closure, including methods that will be used to:

- Remove waste inventory
- Decontaminate regulated units and related equipment
- Dispose of contaminated materials
- Perform the necessary verification sampling to certify completion of the closure process

Closure activities will begin within 45 days of the last receipt of hazardous waste in accordance with WAC 173-303-400 and 40 CFR 265.113.

The closure performance standards and decontamination activities described in this Closure Plan are intended to be applicable only to wastes subject to the requirements of WAC 173-303 and 40 CFR Part 265. Closure activities for wastes subject to 40 CFR 761 are described in Appendix 1B of this Closure Plan.

Closure activities will be monitored by an independent registered professional engineer (P.E.) to certify that, in his or her professional judgment, closure was accomplished in accordance with the specifications or standards presented in the approved Closure Plan. The independent engineer's certification will be submitted to all applicable regulatory agencies as part of NWES' certification of closure, in accordance with WAC 173-303-400 and 40 CFR 265.115. Documentation supporting the engineer's certification will be maintained at the NWES facility until NWES has been released from its financial assurance requirements for closure.

When changes are necessary, this Closure Plan will be amended according to the requirements of WAC 173-303-400 and 40 CFR 265.112. Under the following conditions, NWES must submit a request for an amended Closure Plan:

1. Changes are made in operating plans, the regulated units, or facility design that affect the Closure Plan.
2. The expected year of closure is changed.

NPE35409.03 / 1-10 Area 11 / CJS

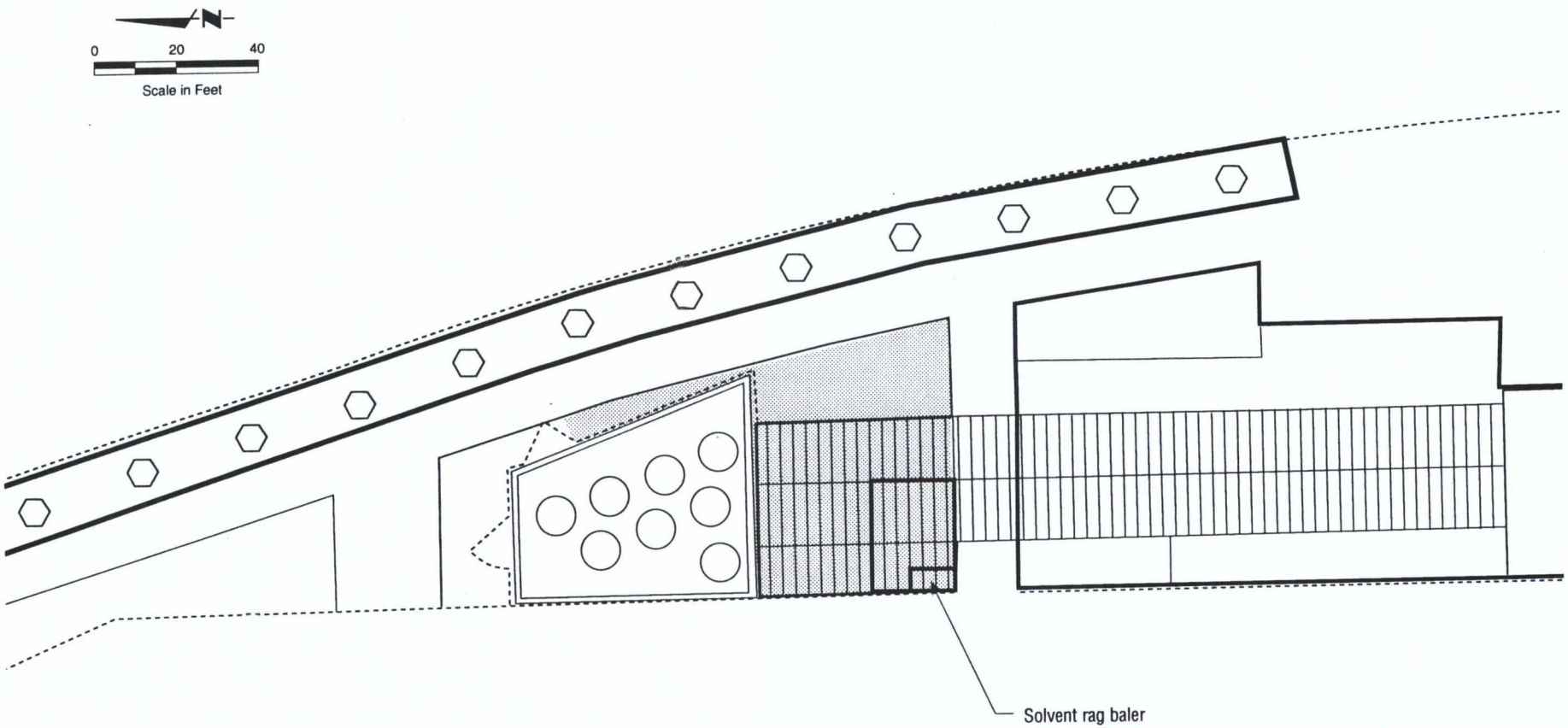


Figure 1-10
Area 11 – Solids Energy Recovery Program Area

3. Unexpected events that affect the Closure Plan occur during closure.

Copies of this Closure Plan and any amendments to it will be maintained at the NWES facility in the Administration Building until closure is completed and NWES is released from its financial assurance obligations.

This Closure Plan addresses the requirements of WAC 173-303-400 and 40CFR Part 265 subparts G, H, I, and J. Postclosure care and contingent postclosure care as required by WAC 173-303-400 and 265, is not required for the regulated units (containers and tanks) at the NWES facility, provided the closure requirements of WAC 173-303-400 and 40 CFR 265 are met. NWES intends to meet these closure requirements. In addition, NWES is performing a detailed site characterization as part of an ordered RCRA Facility Investigation (RFI). Should contamination be confirmed that requires remediation, NWES will be subject to corrective measures under the RCRA Corrective Action Program. Therefore, postclosure care will not be addressed in this Closure Plan.

1.2 General Facility Description

The NWES facility provides transportation and treatment of industrial, commercial, and residential wastes to the Pacific Northwest, Alaska, and Western United States. The NWES facility's U.S. EPA and Washington State Department of Ecology Identification Number is WAD 058367152. Three major categories of wastes are treated at the NWES facility:

1. Wastewater

2. Used oil and oily wastes

3. Hazardous wastes (including corrosives, solvents, caustics, stabilized solids with metals and organic constituents from wastewater sludges and paint and related wastes, antifreeze, and other wastes including pesticides).

The facility is located at 1700 Airport Way South in Seattle Washington. The site occupies 1.3 acres and is bordered by Interstate I-5 to the east, Airport Way South to the west, South Atlantic Street to the north, and South Holgate Street to the south. The entire facility is paved with concrete or asphalt. All NWES-regulated units are provided secondary containment through a network of sumps that drain into the facility's wastewater treatment system. These sumps are designed to prevent releases to the environment and have secondary containment features that meet the requirements of WAC 173-303-640-(4)(b) through (f). The facility is also fenced and staffed over 2 shifts, which extend from 6 a.m. to 2 a.m. During the 4 hours the facility is not staffed with workers, it is monitored by a security guard.

The property occupied by the NWES facility is owned by the following parties:

- Samis Land Company
- Western Tank Properties
- Western Blower

1.3 Maximum Waste Inventory

The hazardous waste management units (tanks and container storage areas) are listed by facility area in Table 1-1, which also presents the unit dimensions and maximum storage capacity.

The maximum waste inventory is based on the total capacity of all storage tanks and container storage areas onsite. The capacities of units that are used for treatment only, i.e., not for storage, are not included in the maximum waste inventory. The capacities of the sumps, and of tanks that are exempt from Resource Conservation and Recovery Act (RCRA) regulation, are not included in the maximum waste inventory.

1.4 Closure Performance Standards

1.4.1 General Performance Standards

Closure of the dangerous waste tanks and container storage areas is designed to:

- Eliminate, minimize, or control, to the extent necessary to protect human health and the environment, postclosure escape of dangerous waste, dangerous waste constituents, leachate, contaminated runoff, or dangerous waste decomposition products to the ground, surface water, groundwater, or atmosphere.

- Minimize the need for further maintenance and postclosure care.

- Return the land to the appearance and use of surrounding land areas to the degree possible, given the nature of facility operations and considering plans at the time of closure for future land use.

In general, these goals will be accomplished by removing dangerous waste containers and dangerous waste residues from tanks and by removing or decontaminating tanks, containers and bases containing or contaminated with dangerous wastes or dangerous waste residues from the NWES facility.

1.4.2 Specific Performance Standards

Removal or decontamination will be carried out until constituent-specific performance standards have been met, as described below.

The levels of dangerous wastes or dangerous waste constituents or residues will not exceed health-based limits as established by the Model Toxics Control Act Cleanup Regulations (MTCA, WAC 173-340) and adopted by the Dangerous Waste Regulations WAC 173-303-610(3).

If no health-based limits exist or insufficient toxicity data exist to calculate a health-based limit, the background level or the PQL (whichever is greater) will be used as the constituent-specific performance standard.

Table 1-1
Hazardous Waste Management Unit Descriptions

Area	Unit Description	Dimensions	Construction Material	Maximum Capacity (gal)	Type of Waste Handled
1	Tank EB	H=5′1″ W=8′1″ L=12′1″ t=0.5″	Steel	4,400	TCLP, corrosives, petroleum
1	Tank WB	H=5′1″ W=8′1″ L=12′1″ t=0.5″	Steel	4,400	TCLP, corrosives, petroleum
1	Shredder	H=16′0″ W=10′4″ L=5′0″	Steel	N/A	Magnesium and alkaline batteries, characteristic waste
2	Centrifuge	D=54″ H=42″	Steel	150	Oily wastes, wastes with solvents, corrosives, or metals
2	Tank C-1	D=8′ H=14′ t=3/8″	Steel	5,500	TCLP, corrosives, petroleum, solvents
2	Tank C-2	D=8′ H=14′ t=3/8″	Steel	5,500	TCLP, corrosives, petroleum, solvents
2	Tank 60-C	D=8′ H=17′ t=3/8″	Steel	6,250	TCLP, corrosives, petroleum, solvent water rinsate
2	Tank 60-E	D=8′ H=17′ t=3/8″	Steel	6,250	Antifreeze
2	Tank 60-D		Steel	6,000	Petroleum and solvents
5	Tank CP-13	D=5′ H=12′6″ t=3/8″	Steel	1,500	-Non-oily wastewaters with listed organics, wastes, and phenolic compounds -Cyanides, organic/inorganic acids and caustics -Hazardous waste liquid, n.o.s. (metals) -Paint booth fall water

H=height; W=width; L=length; t=thickness; D=diameter.

Table 1-1
Hazardous Waste Management Unit Descriptions

Area	Unit Description	Dimensions	Construction Material	Maximum Capacity (gal)	Type of Waste Handled
5	Tank CP-67	D=10′ H=13′6″ t=1/2″	Steel	7,000	-Non-oily wastewaters with listed organics, wastes, and phenolic compounds -Cyanides, organic/inorganic acids and caustics -Hazardous waste liquid, n.o.s. (metals) -Paint booth fall water
5	Tank CP-68	D=10′6″ H=13′ t=0.36″	Steel	7,500	-Non-oily wastewaters with listed organics, wastes, and phenolic compounds -Cyanides, organic/inorganic acids and caustics -Hazardous waste liquid, n.o.s. (metals) -Paint booth fall water
5	Tank CP-69	D=10′ H=13′6″ t=5/16″	Steel	7,000	-Non-oily wastewaters with listed organics, wastes, and phenolic compounds -Cyanides, organic/inorganic acids and caustics -Hazardous waste liquid, n.o.s. (metals) -Paint booth fall water
5	Tank CP-70	D=10′6″ H=13′ t=0.36″	Steel	7,500	-No-noily wastewaters with listed organics, wastes, and phenolic compounds -Cyanides, organic/inorganic acids and caustics -Hazardous waste liquid, n.o.s. (metals) -Paint booth fall water
5	Tank CP-71	D=10′ H=13′6″ t=1/2″	Steel	7,000	-Non-oily wastewaters with listed organics, wastes, and phenolic compounds -Cyanides, organic/inorganic acids and caustics -Hazardous waste liquid, n.o.s. (metals) -Paint booth fall water
5	Tank CP-72	D=10′ H=13′6″ t=1/2″	Steel	7,000	-Non-oily wastewaters with listed organics, wastes, and phenolic compounds -Cyanides, organic/inorganic acids and caustics -Hazardous waste liquid, n.o.s. (metals) -Paint booth fall water

H=height; W=width; L=length; t=thickness; D=diameter.

Table 1-1
Hazardous Waste Management Unit Descriptions

Area	Unit Description	Dimensions	Construction Material	Maximum Capacity (gal)	Type of Waste Handled
5	Tank CP-74	D=10′ H=13′6″ t=1/2″	Steel	7,000	-Non-oily wastewaters with listed organics, wastes, and phenolic compounds -Cyanides, organic/inorganic acids and caustics -Hazardous waste liquid, n.o.s. (metals) -Paint booth fall water
5	Red filter press	N/A	Steel	N/A	Sludge from treatment tanks
5	Small-container processing	85-gallon drum	Steel, concrete base	85-gallon drum	-Non-oily wastewaters with listed organics, wastes, and phenolic compounds -Cyanides, organic/inorganic acids and caustics -Hazardous waste liquid, n.o.s. (metals) -Paint booth fall water
5	Batch tank container	95-gallon drum	Polyethylene	95-gallon drum	-Non-oily wastewaters with listed organics, wastes, and phenolic compounds -Cyanides, organic/inorganic acids and caustics -Hazardous waste liquid, n.o.s. (metals) -Paint booth fall water
6	Tank CS-42	D=10′ H=8′ t=3/16″	Steel	4,300	TCLP, corrosives (base)
6	Tank CS-61	D=8′10″ H=13′ t=1/4″	Steel	5,900	TCLP, corrosives (base)
8	Container Storage Area	N/A	Containers on a concrete base	1,296 55-gallon drums[a] 71,280 gallons total	Containerized wastes
9	Small-container processing	85-gallon drum	Steel, concrete base	85-gallon drum	TCLP, corrosives
9	Profiling Holding	N/A	Concrete	N/A	Containerized wastes
10	Tank S-1	D=10′ H=30′ t=0.352″	Steel	22,000	Petroleum products, virgin gasoline, solvent rinsate, solvents

H=height; W=width; L=length; t=thickness; D=diameter.

[a]Containers may include a combination of other DOT-approved containers in addition to 55-gallon drums. However, the maximum volume will not exceed 71,280 gallons.

Table 1-1
Hazardous Waste Management Unit Descriptions

Area	Unit Description	Dimensions	Construction Material	Maximum Capacity (gal)	Type of Waste Handled
10	Tank S-2	D=10′ H=30′ t=0.352″	Steel	22,000	Petroleum products, virgin gasoline, solvent rinsate, solvents
10	Tank S-3	D=10′ H=30′ t=0.352″	Steel	22,000	Petroleum products, virgin gasoline, solvent rinsate, solvents
10	Tank S-4	D=10′ H=30′ t=0.352″	Steel	22,000	Petroleum products, virgin gasoline, solvent rinsate, solvents
10	Tank S-5	D=10′ H=30′ t=0.352″	Steel	22,000	Petroleum products, virgin gasoline, solvent rinsate, solvents
10	Tank S-6	D=10′ H=30′ t=0.352″	Steel	22,000	Petroleum products, virgin gasoline, solvent rinsate, solvents
10	Tank S-7	D=10′ H=30′ t=0.352″	Steel	22,000	Petroleum products, virgin gasoline, solvent rinsate, solvents
10	Tank S-8	D=10′ H=20′ t=3/8″	Steel	11,800	Antifreeze and other organic wastes
11	Solvent rag baler	N/A	Steel	N/A	F-solvent rags
12	Load/unload area	N/A	Concrete	80 55-gallon drums, 4,400 gallons total	Containerized wastes

H=height; W=width; L=length; t=thickness; D=diameter.

[a]Containers may include a combination of other DOT-approved containers in addition to 55-gallon drums. However, the maximum volume will not exceed 4,400 gallons.

1.5 Description of Closure Activities

1.5.1 General Closure Activities–Sequence and Schedule

The entire facility will be closed in 1995. Final closure of the regulated units will constitute acceptance by Ecology and U.S. EPA of the closure operations conducted at the seven regulated unit areas, and the two container staging areas.

The closure schedule for the NWES facility is depicted in Figure 1-11. The closure will be completed within 180 days if the plan is approved within 90 days of USEPA Region 10 receipt by the Regional Administrator. Closure activities are divided into six major steps:

1. Remove existing inventory, including drums and small containers stored and staged in Areas 1, 2, 5, 8, 9, 10, and 12, and the contents of the bulk tanks in Areas 2, 6, 10, and 11.

2. Decontaminate bulk tanks emptied in Step 1 and remove equipment. (Equipment removal may involve shipping it to a scrap dealer or an appropriate disposal site, or selling it for industrial purposes or storing it in another location onsite.) Of course, equipment that an incoming facility owner/operator has negotiated to be left onsite will remain.

3. Decontaminate all surfaces, containment structures, and sumps in the above-listed areas.

4. Sample all cleaned areas to verify the performance standard, as described in this Closure Plan and the Sampling and Analysis Plan (SAP) in Appendix 1A. Repeat Step 3 if necessary.

5. Empty wastewater treatment plant tanks in Area 5 and decontaminate the tanks. Remove the tanks and clean the surfaces, containment structures, and sumps. Sample the area as described in this Closure Plan and the SAP, Appendix 1A.

6. Close stabilization tanks in Area 1 and clean the surfaces. Sample the area as described in this Closure Plan and the SAP, Appendix 1A. Ship offsite or sell for industrial use to an approved TSD or solid waste facility, any additional inventory of wastes accumulated as a result of closing activities.

The sequencing developed for this closure will permit use of NWES's wastewater treatment equipment to facilitate disposal of rinsates and decontamination residues and discharge them to Metro (the Municipality of Metropolitan Seattle) so long as these effluents comply with NWES's Discharge Authorization Requirements (Permit No. 7124). Solid residues can then be stabilized in the (Area 1) Waste Stabilization Tanks for offsite disposal to an approved TSD before these tanks are finally decontaminated and closed.

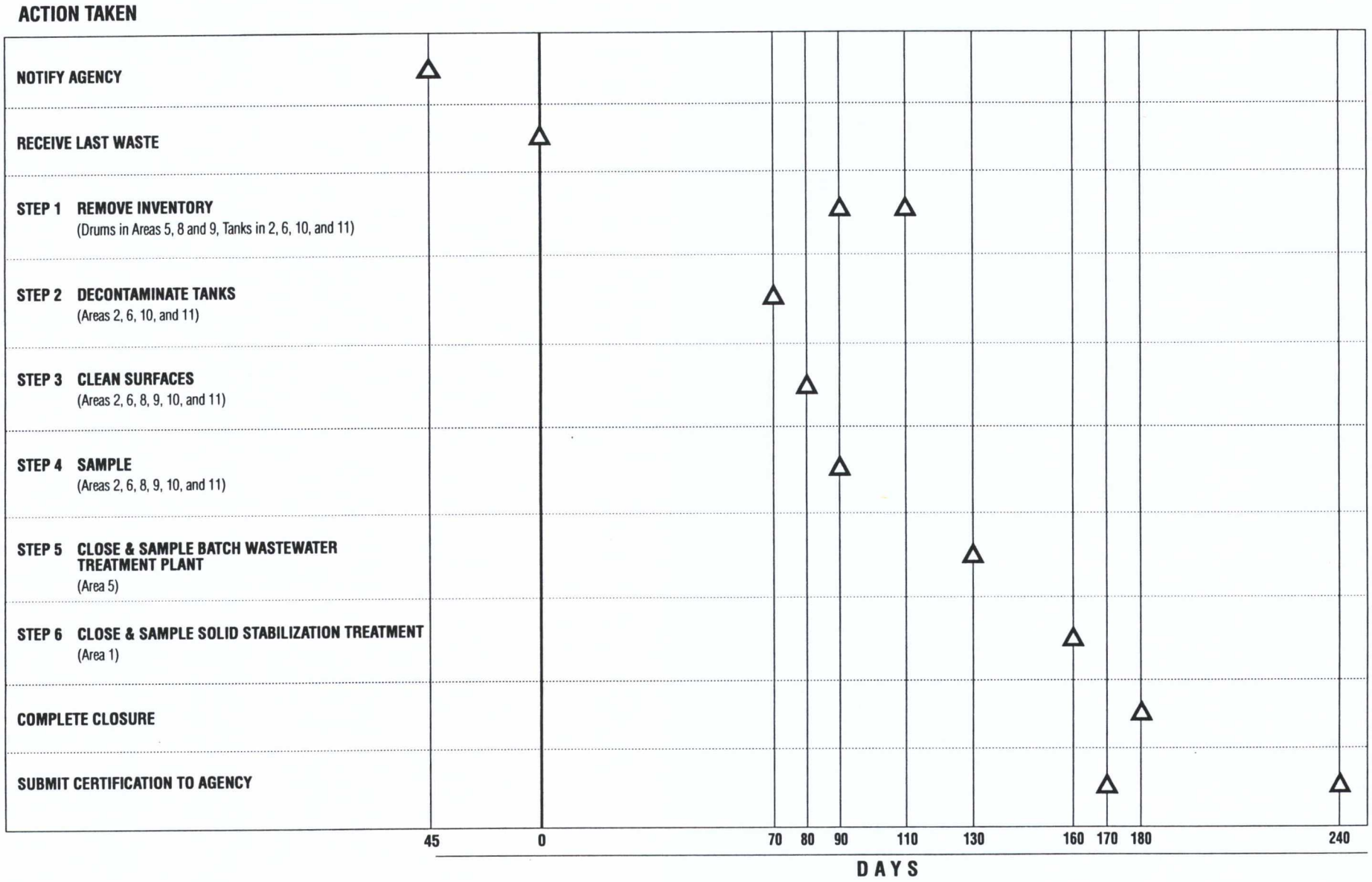


Figure 1-11
Facility Closure Schedule

1.5.2 Inventory Removal Procedures

Containers

The inventory removal procedures for containers will apply to Areas 8 and 9 and applicable portions of Areas 1, 2, 5, 10, and 12. Within 90 days after receiving the final volume of dangerous waste at the NWES facility, containers will be removed and transported to an authorized offsite treatment, storage, or disposal facility (TSDF). Problem waste streams will be detailed on a case-by-case basis. Inspections of all regulated units including the container storage areas will continue until the certification of facility closure has been submitted to Ecology and U.S. EPA. The method of transportation and the TSDF used will be the same or similar to those used during the normal operating life of the dangerous waste container storage facility. Containers will be packaged, labeled, and manifested for shipment according to the same in-plant procedures used during the active life of the facility.

Prior to shipment, all containers will be inspected for leakage. The waste in any containers found to be leaking will be transferred to non-leaking containers. Any equipment or clothing that comes into contact with the waste will be decontaminated or disposed of at an authorized TSDF.

Tanks

The inventory removal procedures for tanks apply to Areas 1, 2, 5, 6, 10, and 11. Within 110 days after the final volume of dangerous waste is received at the NWES facility, tank contents will be treated, removed, transported, and disposed of as appropriate to the following:

- An authorized TSDF for hazardous residues
- An approved Washington State Minimum Functional Standards (MFS) solid waste landfill
- Metro's Publicly Owned Treatment Works (POTW) under the requirements of NWES's Wastewater Discharge Permit No. 7124.

Similarly, residues generated from the decontamination of these tanks will be disposed of as appropriate for the nature and quality of the respective waste stream.

As described above, tanks in Areas 1 and 5 will be used to treat the residues generated during closure and will close within 110 days of their last receipt of waste.

1.5.3 General Decontamination Procedures

Containers

Once all containers have been removed from the container storage areas, the surrounding surfaces will be decontaminated. Decontamination procedures will be implemented for concrete surfaces, the containment dikes, berms, and sumps, and any other possibly contaminated equipment or structures within these areas, focusing on surfaces that have had direct contact with dangerous wastes or waste residues.

NWES proposes to follow the treatment standard for characteristic debris as specified in 40 CFR 268.45 for the concrete surfaces, specifically using one of the alternative treatment standards specified in Table 1 (40 CFR 268.45). The concrete or sump surface will first be inspected for cracks or gaps that have not been previously sealed. Any cracks will be noted in the field log, and those capable of transmitting decontamination fluids to the soil will be sealed with a water-resistant seal. Next, the surface will be cleaned using high-pressure steam or water sprays with detergents. All rinsate will be collected and tested prior to disposal into the NWES wastewater treatment system or a TSDF, whichever is appropriate.

Following decontamination, procedures will be undertaken to verify that the decontamination is complete per Ecology's *"Guidance for Clean Closure of Dangerous Waste Facilities"* dated August 1994. The procedures are outlined in the SAP, Appendix 1A.

Tanks

Once the contents of each tank have been removed, the tanks will be decontaminated. NWES proposes to follow the treatment standard for characteristic debris as specified in 40 CFR 268.45 for those surfaces of tanks that will be scrapped, specifically using one of the alternative treatment standards specified in Table 1 (40 CFR 268.45). Tanks, pumps, and piping will be triple-rinsed using high-pressure steam or water sprays with detergents. All decontamination solutions will be tested prior to disposal into the NWES wastewater treatment system or a TSDF, whichever is appropriate.

There are three types of tanks at the NWES facility: carbon steel, stainless steel, and polyethylene. Each surface will be decontaminated as appropriate for the tank construction material and its contents. The tanks will be cleaned as outlined in Table 1-3. Polyethylene surfaces will be decontaminated with an appropriate cleaning solution and triple-rinsed. The tank surfaces that have been treated using one of the specified technologies referred to above and that no longer exhibit a characteristic of hazardous waste are not hazardous waste and need not be managed in a Subtitle C facility. Tanks intended for reuse either on- or offsite will be similarly decontaminated. However, the future owner/tenant will be given the opportunity to review the analytical results and request additional tests that NWES may consider implementing. Depending on market conditions, the cleaned tanks will be sold either as scrap metal or for exclusive industrial use.

Table 1-2 Tank Decontamination Procedures		
Tank Type	**Procedures**	
Carbon steel, polyethylene, stainless steel, or concrete storage tank (oily wastewaters)	1.	Hot-water and steam-spray with rotating ball
	2.	Wash with TSP or alkaline surfactant (anionic, pH 11.0 or above)
	3.	Rinse with hot water
Carbon steel, polyethylene, stainless steel, or concrete wastewater Tank (corrosive liquids, wastewaters)	1.	Pressure-wash with water to remove suspended solids
	2.	Pressure-wash with ammoniating or sodium/citric acid solution (pH 5.0)

General Sequence of Decontamination Activities

Decontamination of equipment and structures including tanks and concrete surfaces is described below.

1. Before the start of closure activities for a given area, all surfaces will be visually inspected for cracks which have not been previously sealed and other openings through which possible previous spills or closure cleaning solutions and rinsates could reach underlying soils. Tanks will be inspected for leaks and drippages both current and historical. Documentation of any cracks, openings, or leaks observed during closure will be maintained with other closure records. During the visual inspection, any stains that might suggest the presence of contaminants will also be noted. If cracks or openings are encountered, they will be sealed with a sealant resistant to water and the cleaning solutions that will be used during decontamination.

2. Following the visual inspection, equipment used to operate and close the area will be identified. Types of equipment that are periodically or routinely used for waste transport and handling by NWES and equipment expected to be used during the closure process are listed in Table 1-3.

Table 1-3
Equipment Potentially Requiring Decontamination

Trucks (including vacuum trucks)	Pumps
Forklifts	Pump connections
Safety equipment	Valve connections
Ladders	Transfer lines
Tools	Piping
Jackhammers	Containerized waste compactor
Drilling equipment	Decontamination equipment (brushes, buckets, etc.)
Hand augers	
Sampling equipment	Steam-cleaning equipment
Hoses	High-pressure wash equipment

Any equipment that had been used for dangerous waste handling but is not required for closure (such as forklifts, hand trucks, and shovels) will be decontaminated with hot water using a high-pressure hose, steam cleaning, and detergent solutions. This equipment will be decontaminated in Area 5. Wastewaters and rinsates will be discharged to the onsite wastewater treatment system and tested before final discharge to the POTW.

3. Each surface area that shows visual signs of past spillage will undergo a preliminary cleaning at least 1 foot in all directions beyond evidence of the visually contaminated area. A heavy-duty cleaning solution will be applied with a stiff broom, scrub brush, or similar method. Washwaters and rinsates generated during this process will be discharged into the onsite wastewater treatment system and tested before final discharge to the POTW.

4. The concrete floors, lower wall portions, waste storage, ramp, and loading dock will be washed first, then decontaminated by steam cleaning. These areas will be washed twice with a detergent cleaning solution of trisodium phosphate (TSP) and then steam rinsed with plain water. Washwaters and rinsate will be discharged into the onsite wastewater treatment system and tested before final discharge to the POTW.

   Prior to any steam cleaning of open surfaces, plastic sheeting or other moisture barriers will be placed around the outside perimeter of the work area to contain possible overspray. The plastic sheeting or other barrier will be disposed of as solid waste following these decontamination steps.

5. Containment sumps will be decontaminated following decontamination of adjacent surfaces. The containment sumps will be decontaminated by steam cleaning with a detergent cleaning solution of TSP. Washwaters and rinsate will be discharged into the onsite wastewater treatment system and tested before final discharge to the POTW.

6. Equipment used in sampling during closure activities will also be decontaminated according to the procedures outlined in the Closure Plan and the SAP. Portable equipment decontamination will be performed in Area 5.

If closure performance standards cannot be met using steam cleaning and pressure washing, extraction technologies provided in 40 CFR 268.45 will be used to remove the outer portion (0.6 cm) of the concrete surface in question. A shot blasting or spalling system is one type of approach that will be considered. A chemical extraction system will be used on nonconcrete tank surfaces.

If abrasion or chemical methods are also unsuccessful in meeting the performance standards, concrete, metal, and polyethylene surfaces from the facility will be removed and disposed of properly. The concrete surfaces will be broken into manageable-sized pieces using an impact hammer, pug mill, or other equipment. Metal and polyethylene will be cut as necessary. Steel reinforcing rods imbedded in the concrete will be cut as necessary. The rubble and associated soils will be removed using a backhoe or other excavation equipment. This debris will be loaded and hauled to an approved offsite TSDF following proper manifesting and transportation labeling requirements. Trucks will be lined and covered prior to leaving the site to prevent release of materials enroute. Any necessary notification of or approvals from local health jurisdictions will be made or obtained prior to transport.

General Decontamination Solutions

During decontamination of structures and equipment associated with the NWES facility, a combination of cleaning solutions and decontamination techniques that have the capability of removing a variety of possible waste constituents will be used. Selection of an appropriate solution will be based on the item to be decontaminated, the past use and spill history of the area to be decontaminated, and the known or suspected level of contamination.

Examples of the solutions expected to be used to decontaminate the container structures and equipment in Areas 8 and 9 are presented in Table 1-4.

Table 1-4
Typical Heavy-Duty Decontamination Solutions

Tetrasodium ethylenediamine tetraacetate	1 to 2 percent
Sodium tripolyphosphate	1 to 3 percent
Trisodium phosphate (TSP) (anhydrous)	1 to 3 percent
"Solar"[a] TE (or similar product)	5 to 20 percent
"Solar"[a] NP (or similar product)	0.5 to 5 percent
Ethylene glycol monobutyl ether	3 to 8 percent
"Solar"[a] S-2552	1 to 5 percent
Water	Balance

[a]A Swift & Company product.

Each constituent in the formulation has a specific function:

- Tetrasodium ethylenediamine tetraacetate is a chelant, which dissolves transition metal compounds including those of lead, nickel, copper, and mercury, so that they can be removed from the equipment.

- Sodium tripolyphosphate and trisodium phosphate help prevent the precipitation of calcium and magnesium from the alkaline solution and act as buffers in the alkaline pH range.

- The remaining constituents, "Solar" products and ethylene glycol monobutyl ether, act as surfactants and organic "coupling" agents to emulsify and stabilize solvents, oils, and other organics. Such a solution is typically diluted with water in the ratio of 1:10 to 1:25.

The standard industrial washing solution that will be used is TSP. This material is commonly used in industrial cleaning applications and is typically mixed at a ratio of 1 pound per every 10 gallons of water. The solution can be sprayed at room temperature with a pressure washer or at high temperatures with a steam cleaner.

If found to be necessary to accomplish the decontamination, a heavy-duty cleaning solution will be selected from available commercial products or formulated specifically for use at the storage facility.

1.6 Performance Standard Verification

This section addresses the sampling and analyses that will be conducted for closure verification. The detailed approach, rationale and description of field procedures are presented in the Closure Plan Sampling and Analysis Plan (SAP), Appendix 1A. The SAP describes the specific methodologies to be used in collecting and analyzing samples of concrete facility surfaces. It also includes, as an important component, descriptions of the QA/QC measures to be used during sampling. The SAP will be used in conjunction with a site health and safety plan.

1.6.1 Sampling Objectives

The objective of the sampling and analysis program is to collect data that can be used to assess whether the concrete or facility surfaces in a given management area contain residual contamination from past use at levels that exceed the closure performance standards. Based on this assessment, decisions can be made on appropriate methods for managing the closed facility or closure debris and whether additional actions are appropriate.

1.6.2 Selection of Sampling Sites

Section 2 of the SAP, Appendix 1A, provides a summary of the sampling approach used for the selection of numbers and locations of samples to be collected during closure.

1.6.3 Sampling and Analysis Procedures

The sampling anticipated to be conducted onsite during closure will include the following items:

- Washwater and rinsate generated during decontamination activities
- Concrete surfaces and containment sumps

Sampling and analysis methods and material disposition for these items are summarized in the following discussion and Table 1-5.

Washwater and Rinsate Generated During Decontamination Activities

Washwater and rinsate generated during decontamination activities will be collected and tested. Fluids from different decontamination areas will not be mixed until analytical results have been evaluated and indicate that it is appropriate to do so.

Concrete Surfaces, Containment Sumps, and Other Surfaces

The concrete surfaces that comprise container storage, containment sumps, load/unload areas, and tank storage areas will be sampled according to the systematic random grid described in the Closure Plan SAP. Surface samples will be collected for each containment area and sump in accordance with the sampling approach described in the Closure Plan SAP. Concrete sampling will be accomplished by collecting chips to a depth of 1/2 inch of the structure. Samples of concrete to be analyzed will be passed through a No. 4 sieve.

Concrete sumps will be sampled by chips. The analysis from each sump will correspond to the constituents managed within the area the sump is located (i.e., the corresponding drainage area).

1.6.4 Comparison of Analytical Results with Closure Performance Standards

For concrete surfaces, containment sumps, and other surfaces, the results of sampling and analysis after decontamination will be used to determine whether the closure performance standards described have been met. If analysis of the samples from a containment system indicates levels below the closure performance standards, (i.e., the PQL of the respective constituent), no additional decontamination will be conducted.

1.6.5 Quality Assurance

All data submitted to Ecology and U.S. EPA will be generated by an accredited analytical laboratory in accordance with SW-846 and/or CLP requirements. In addition, the Closure Plan SAP addresses necessary QA/QC activities associated with closure that include the following:

Table 1-5
Contaminated Media Disposition

Sampled Media or Material	Analysis Result	Action
Washwater and rinsate solutions	Exceeds CPS	Solutions will be analyzed for parameters necessary to assess the capability for treatment in the onsite wastewater treatment system and subsequent discharge to the Metro POTW under a permit variance. Otherwise, solutions will be managed as dangerous waste; treated or disposed at an offsite TSDF.
Concrete surfaces, asphalt	Exceeds CPS	
	- Designated DW	Containment system debris will be managed as dangerous waste; treated or disposed in an offsite permitted TSDF.
	- Non-DW	Containment system debris will be treated or disposed in a sanitary landfill following the preparation of a disposal plan and receipt of health department approval.

[a]Closure performance standard (CPS): depending on waste constituent, CPS will be health-based (MTCA or RCRA Subpart S cleanup levels), background, or PQL; refer to Section 1.3.

Note: Media contaminated with listed wastes are subject to land disposal restrictions (40 CFR 268) and associated management requirements.

DW: Dangerous Waste.
PQL: Practical Quantitation Level.
SAP: Sampling and Analysis Plan.
SW: Solid Waste.
TSDF: Treatment, Storage, and Disposal Facility.

- Project description
- Project organization and responsibilities
- QA objectives for measurement
- Sampling procedures
- Sample custody
- Calibration procedures
- Analytical procedures
- Data reduction, validation, and reporting
- Internal quality control
- Performance and systems audits
- Preventive maintenance
- Data precision, accuracy, and completeness
- Corrective actions

1.6.6 Analytical Methods

Samples will be analyzed by one or more agency-certified laboratories using Ecology- and EPA-approved methods to determine whether performance standards have been met. The types of dangerous wastes handled at the NWES facility include:

- Acids
- Caustics
- Solvents
- Paints
- Metal-finishing solutions
- Petroleum products

The POCs and associated analytical methods for these wastes are summarized in Table A-3 of Appendix 1A.

1.7 Inspections

Closure activities will be reviewed by an independent registered professional engineer to assess whether they have been conducted in accordance with this plan. The closure activities are described in Table 1-6.

If the engineer's observations indicate that closure is not being conducted according to the approved Closure Plan, suggestions to bring the activities into accordance with the plan will be made. The observations will provide the basis for the engineer's certification of closure (see Section 1.7).

1.8 Certification of Closure

Within 60 days of completion of final closure, a representative of NWES will submit a certification signed by an authorized NWES representative and the independent registered professional engineer that the dangerous waste container and tank storage and treatment

Table 1-6
Closure Inspections of Facility

Closure Step	Inspection Intervals	Activity
1. Inventory removal	Initial inspection Final inspection	• First day wastes removed • When all containers are gone
2. Bulk tank decontamination	Initial inspection Intermediate inspection Final inspection	• First day tanks rinsed • Day rinsate sampled • Review of analytical data
3. Surface cleaning	Initial inspection Intermediate inspection Final inspection	• First day surfaces cleaned • Day rinsate sampled • Review of analytical data
4. Sampling	Initial inspection Intermediate inspections Final inspection	• First day of sampling • Day rinsate sampled • First day concrete sampled • Review of analytical data
5. Wastewater plant dismantling	Initial inspection Intermediate inspection Final inspection	• First day wastes removed • First day concrete sampled • Review of analytical data
6. Stabilization tank dismantling	Initial inspection Intermediate inspection Final inspections	• First day wastes removed • First day concrete sampled • Review of analytical data • Site inspection at completion of closure coverall site

facility has been closed in accordance with this Closure Plan. Documentation supporting the engineer's certification will be maintained on file at the facility and will be furnished to the regulatory agencies upon request until NWES is released from the financial assurance requirements for closure.

1.9 Notice in Deed

NWES is a storage and treatment facility only. No intentional disposal has occurred onsite. It is NWES's intent that no dangerous wastes will be left in place after closure; therefore, a notice in the deed regarding dangerous waste is not expected to be necessary.

1.10 Financial Requirements

Facility Closure Cost Estimate

A cost estimate has been prepared for the closure activities described in this interim status closure plan. Table 1-7 presents an estimated cost for the elements required to close the facility. This is an order-of-magnitude cost estimate. As defined by the American Association of Cost Engineers, this is an estimate produced without the aid of detailed engineering data and is projected to have an accuracy of +50 percent to -30 percent. Therefore, a contingency of 10 percent has been added to this estimated cost.

Financial Assurance

Northwest EnviroService has selected a letter of credit as its financial assurance for closure of the facility. A signed copy of the financial assurance documentation will be sent to the Washington State Department of Ecology by certified mail after final approval of the Closure Plan.

Postclosure financial assurance is not required because there will be no postclosure activities or associated costs.

sea10027876.wp5

Table 1-7
Closure Cost Estimate

A. Tanks

1. Removal of final waste inventory based on maximum storage tank quantities and Drum Storage.

Storage Tanks Maximum Volumes and Waste Types

Antifreeze	6,250 x 1.25	=	$ 7,812
	11,800 x 1.25	=	14,750
Corrosive Bases	4,300 x 1.25	=	5,375
	5,900 x 1.25	=	7,375
Corrosive Acids	11,800 x 1.25	=	14,750
Flammable BTU Value	22,000 x .81	=	17,820
	22,000 x .81	=	17,820
	22,000 x .81	=	17,820
Solvents Incineration	22,000 x 2.42	=	53,240
	128,050		$ 156,762

2. Decontamination of Storage and processing tanks, piping, pumps and liners.

a.	Washing labor - 95 hours @ $35.00/hour	$ 3,325
b.	Disposal of wash water - 21 tanks @ 500 gallons/tank = 10,500 gallons @ $0.75/gallon	$ 7,875
c.	Vacuum truck - 4 hours @ $65.00/hour	$ 260
d.	Disposal cost of spill control pillows (2 drums since piping is minimal)	$ 200
	Cost of new drums	$ 50
e.	Dismantling of 21 tanks - 150 hours @ $35.00/hour	$ 5,250
		$ 19,235

Table 1-7 (con't)
Closure Cost Estimate

B. Containers		
1. Removal of Final Waste Inventory		
a.	Disposal and transportation of 432 drums x 55 gallon - gallons x 1.71 (average per gallon disposal cost)	$ 40,629
	staging areas 160 x 55 x 1.71 =	$ 15,048
	unload areas 80 x 55 x 1.71 =	$ 7,524
	Proc. staging stalls Sys. 200 x 55 x 1.71	$ 18,810
2.	Labor to Load Flatbed at NWES - 7.4 trips @ 12 hours/load - 88.8 hours @ $25.00/hour	$ 2,220
3.	Disposal of Container Storage Area Decontamination Washes	
a.	Labor - 8 hours @ $35.00/hour	$ 280
b.	Disposal of wash water - 1,600 gallons @ $0.25/gallon	$ 400
c.	Transportation via vacuum truck - 4 hours @ $65.00/hour	$ 260
	Subtotal	$ 85,171
C. Decontamination of Equipment		
1.	Rental of Steam Cleaner - 10 days @ $75.00/day	$ 750
2.	Disposal of Decontamination Residues (Previously figured into volumes generated)	$ 0
D. Soil Sampling and Analysis		
1.	Labor to Pull Representative Samples - 40 hours @ $35.00/hour	$ 1,400
2.	See Attached Fee Schedule for Analysis Costs	$ 27,388
	Subtotal	$ 29,538

Table 1-7 (con't)
Closure Cost Estimate

E. Soil Removal and Disposal	
1. Will be determined at closure and closure cost estimate will be adjusted	
F. Closure Certification	
1. Labor (professional engineer) - 80 hours @ $75.00/hour	$ 6,000
Subtotal	$ 6,000
G. Subtotal	
1. Subtotal	$311,554
2. Plus 10% Contingencies	$ 31,155
3. Supervision by NWES Personnel - 120 days closure period - 685 hours @ $17.50/hour	$ 12,000
TOTAL CLOSURE COST - 1992 DOLLARS	$354,709
	2.9 X
	(CPI 1992)
	$ 10,286
Additional cost for Transportation and disposal of TSCA (PCB) only waste landfill/incineration	$ 9,898.00
	$374,893
	2.8 X
	(CPI 1993)
GRAND TOTAL CLOSURE COST - 1993 DOLLARS	$385,390
	$204,153
	3.4 X
	(CPI 1994)
	$211,094
	+156,762
GRAND TOTAL CLOSURE COST - 1994 DOLLARS	$367,856

Appendix 1A
Field Sampling and Analysis Plan
in Support of Closure

Revision #1—December 30, 1994

Contents

Figures

Tables

sea10028AE8.wp5

A1 Introduction

During closure of the Northwest EnviroService (NWES) Seattle facility, removal and/or decontamination will be carried out until the analysis of samples collected from the affected equipment or media indicates that the *closure performance standard* has been met.

NWES proposes to meet the cleanup levels established under MTCA (WAC 173-340) for environmental media that are based on protection of human health and the environment. These cleanup levels have been adopted by the Dangerous Waste Regulations. If no health-based limit exists or insufficient toxicity data are available to calculate a health-based limit, the background level or the PQL (whichever is greater) will be used.

sea1002891C.wp5

A2 Sampling Approach and Rationale

A2.1 Summary

The Closure Plan requires that samples be collected during closure. The sample analysis results will be compared to the performance standard to verify that clean closure has been achieved. This section summarizes the basis for developing the closure sampling approach. As discussed in the Closure Plan, materials to be sampled during closure include the following:

- Washwater and rinsate generated during closure decontamination activities
- Concrete surfaces, containment sumps, and other structures

The collection of samples for washwater rinsate will use systematic, random grab sampling procedures. These sampling procedures are described in Section A3.

For concrete surfaces and sumps, random samples distributed over a systematic grid and biased samples where obvious evidence of contamination is present (e.g., staining) approach will be used. A summary of this sampling approach is presented in Sections A2.2 and A2.3.

A2.2 Sampling Approach and Sample Size

A2.2.1 Washwaters and Equipment

Because the number of washwater rinsate drums generated during closure cannot be accurately estimated, a sampling strategy based on systematic, random sampling will be conducted at the time of closure. Rinsewaters and decontamination fluids will be collected by process area before they are discharged to Metro. Grab samples will be composited from five drums or less. The results will be compared to Metro's Discharge Limits before discharge to the facility. The precise numbers and locations of samples will depend upon the number of rinsate drums at the time of closure. These numbers and locations will be documented in the field logbook.

A2.2.2 Concrete Surfaces

Randomly selected concrete chip samples will be collected from each of NWES' seven operational areas with regulated units and two container staging areas. Random concrete chip sampling will follow a nonparametric approach that permits probabilistic conclusions.

This generates a sample size (n) of three samples per process area. The number of samples collected within an area is independent of the area's size, and the maximum concentration encountered is the value compared to the performance standard to assess closure status.

In order to achieve even spatial distribution within an area, sampling locations will be spaced systematically using a random starting point and an evenly spaced interval. The grid spacing is based on:

$$Grid\ spacing = \sqrt{(\frac{A}{n})}$$

where:

A = surface area
n = sample size

Figures A-1 through A-9 show each process area with the overlaid grid spacing. Table A-1 presents the proposed chemical analyses for each area by sample media. Concrete chips will be collected to an approximate depth of 0.6 cm.

A2.3 Biased Sampling Approach

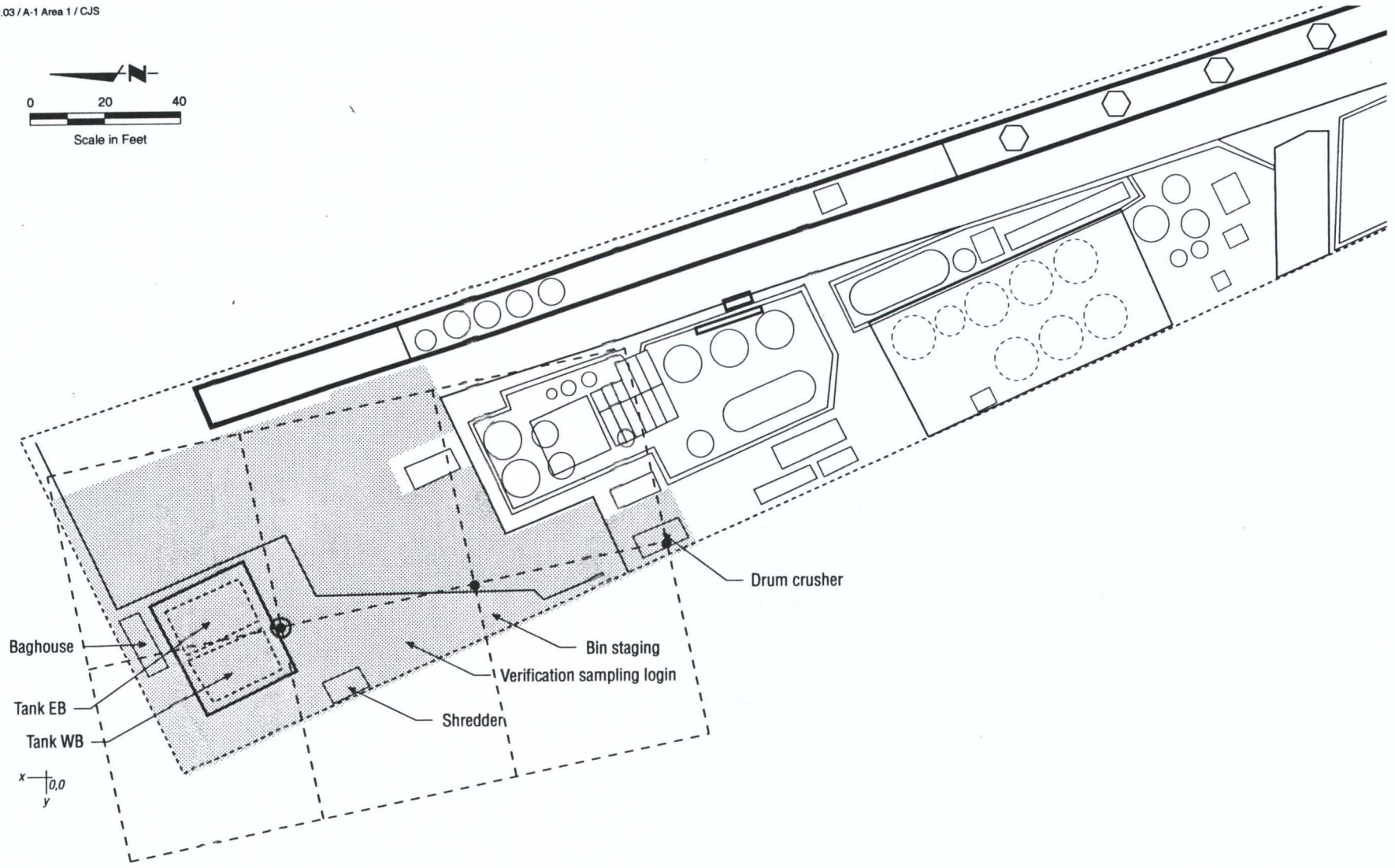
All sumps will be selected as biased sampling locations. Visual observations and a review of past repair records maintained during the operating life of the facility will be used to select biased sampling locations. A summary of the visual concrete inspection will be included in the field logbook.

A2.4 Interpretation of Sampling Results

The decisions regarding the presence or absence of concrete surface contamination at the NWES facility will be based on comparison of the analytical results with the performance standards. If all samples meet the performance standard criteria for each constituent, the surface or the underlying area will be considered clean. If required, sampling of additional media will be conducted under the RFI Workplan.

sea1002891D.wp5

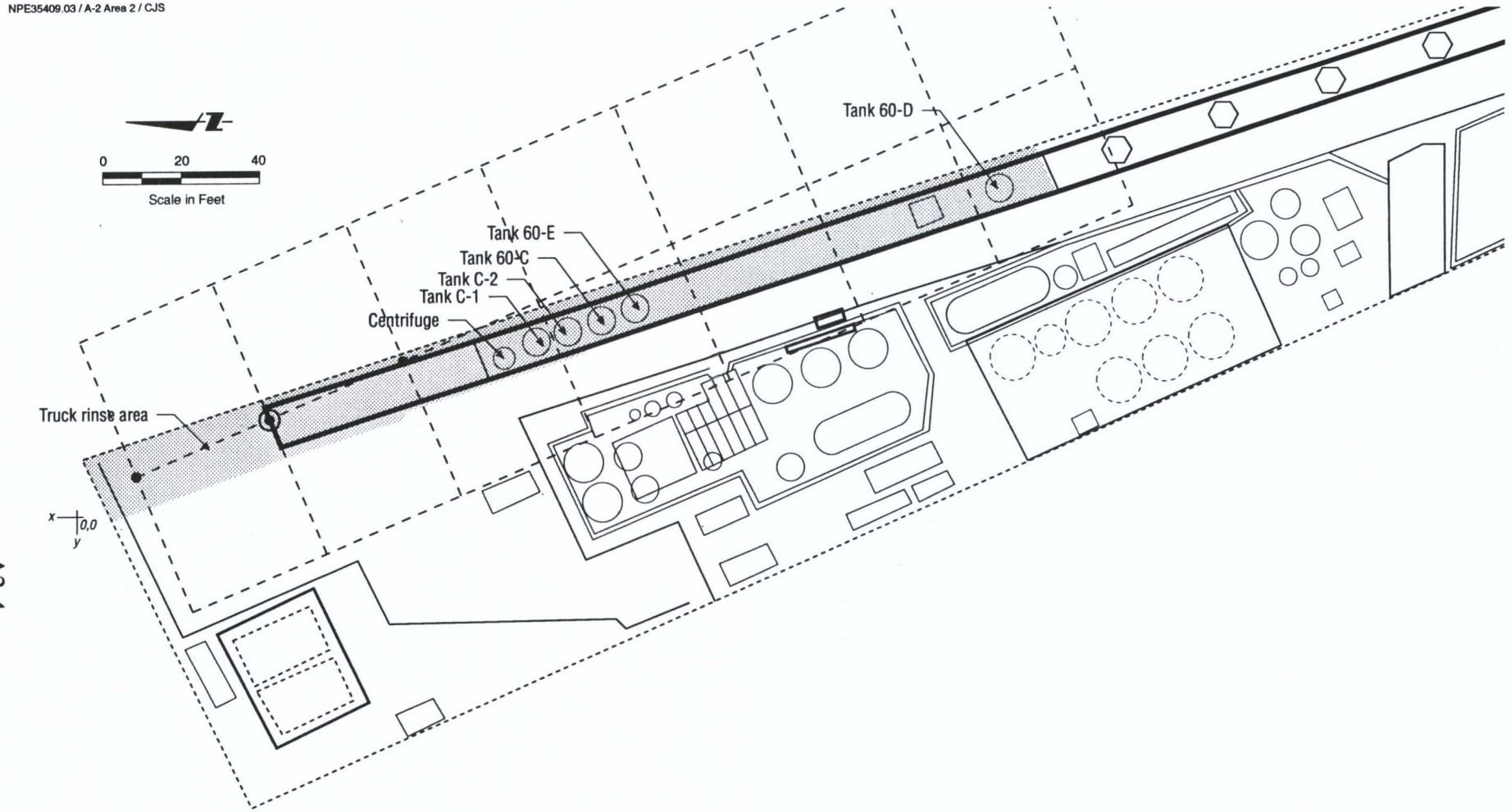
NPE35409.03 / A-1 Area 1 / CJS



Sample Area
Sample Location
Random Starting Point

Area in Square Feet: **8,112 ft²**
Random Starting Coordinates: **x = 62 ft, y = 39 ft**
Angle of Grid Rotation: **348°**
Grid Interval: **52'**

Figure A-1
Area 1 – North Yard



Sample Area
Sample Location
Random Starting Point

Area in Square Feet: **4,096 ft²**
Random Starting Coordinates: **x = 49 ft, y = 26 ft**
Angle of Grid Rotation: **337°**
Grid Interval: **37'**

Figure A-2
Area 2 – Oil/Water Separator Tank Area

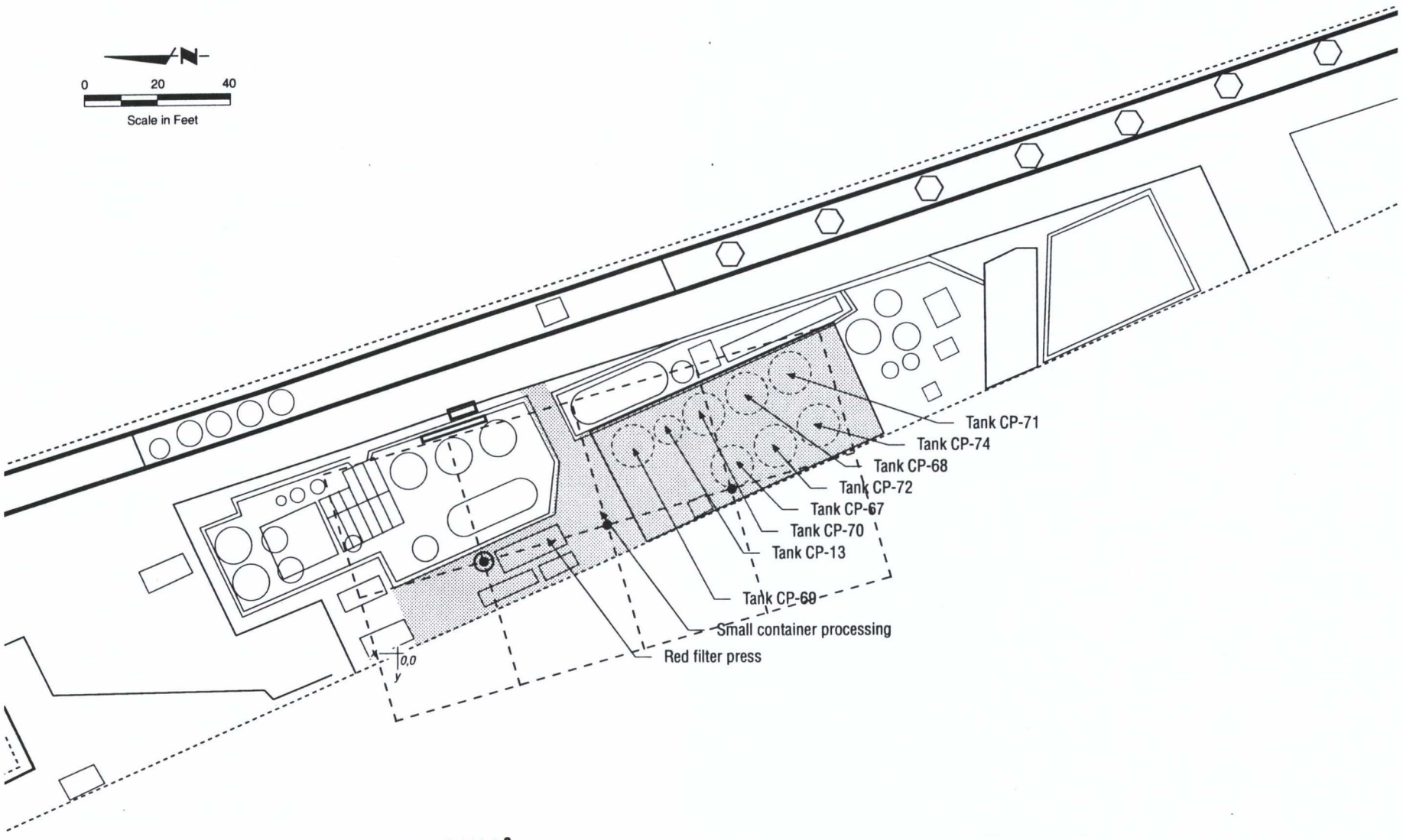


Figure A-3

Area 5 – Batch Wastewater Treatment Area

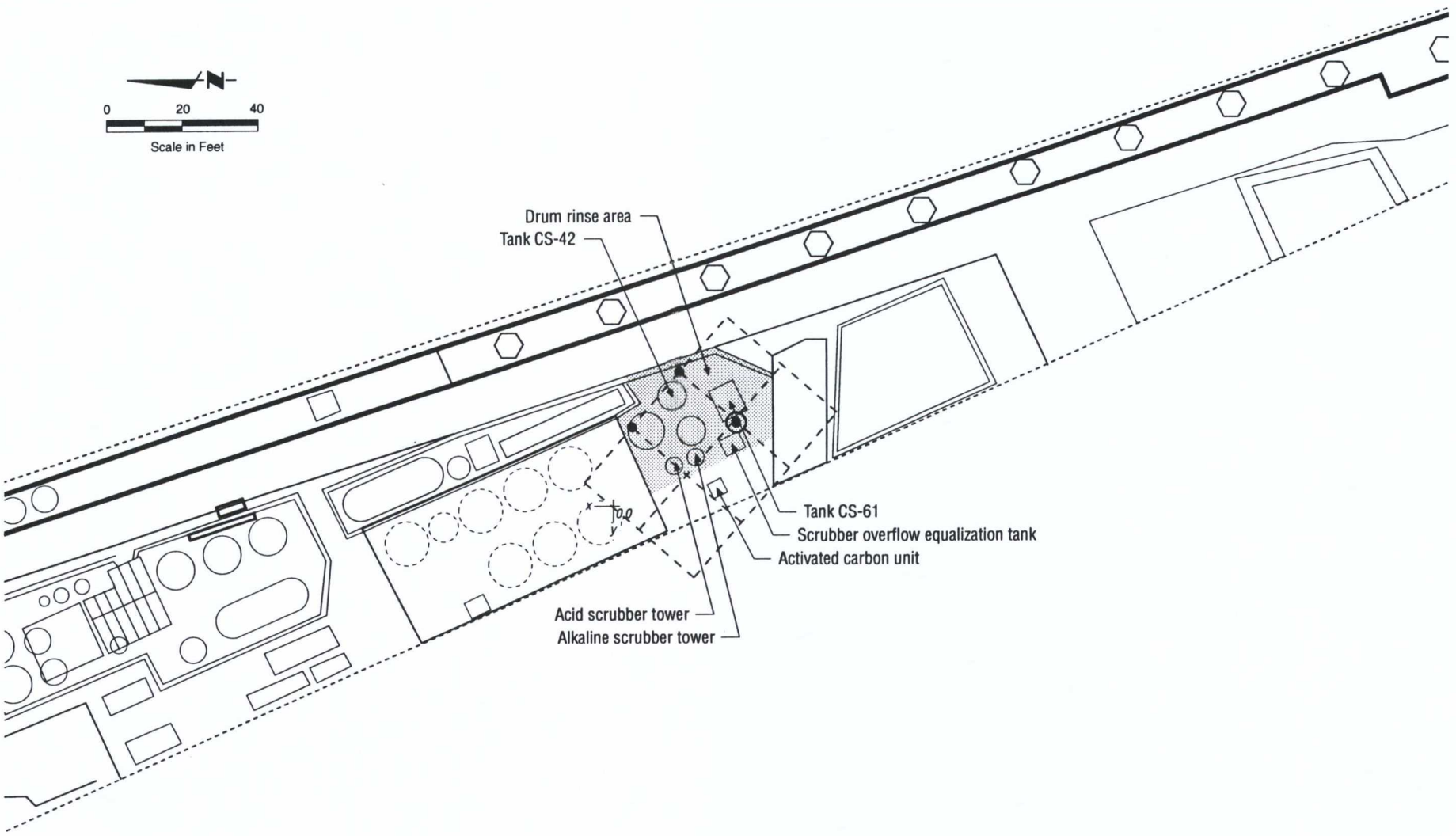
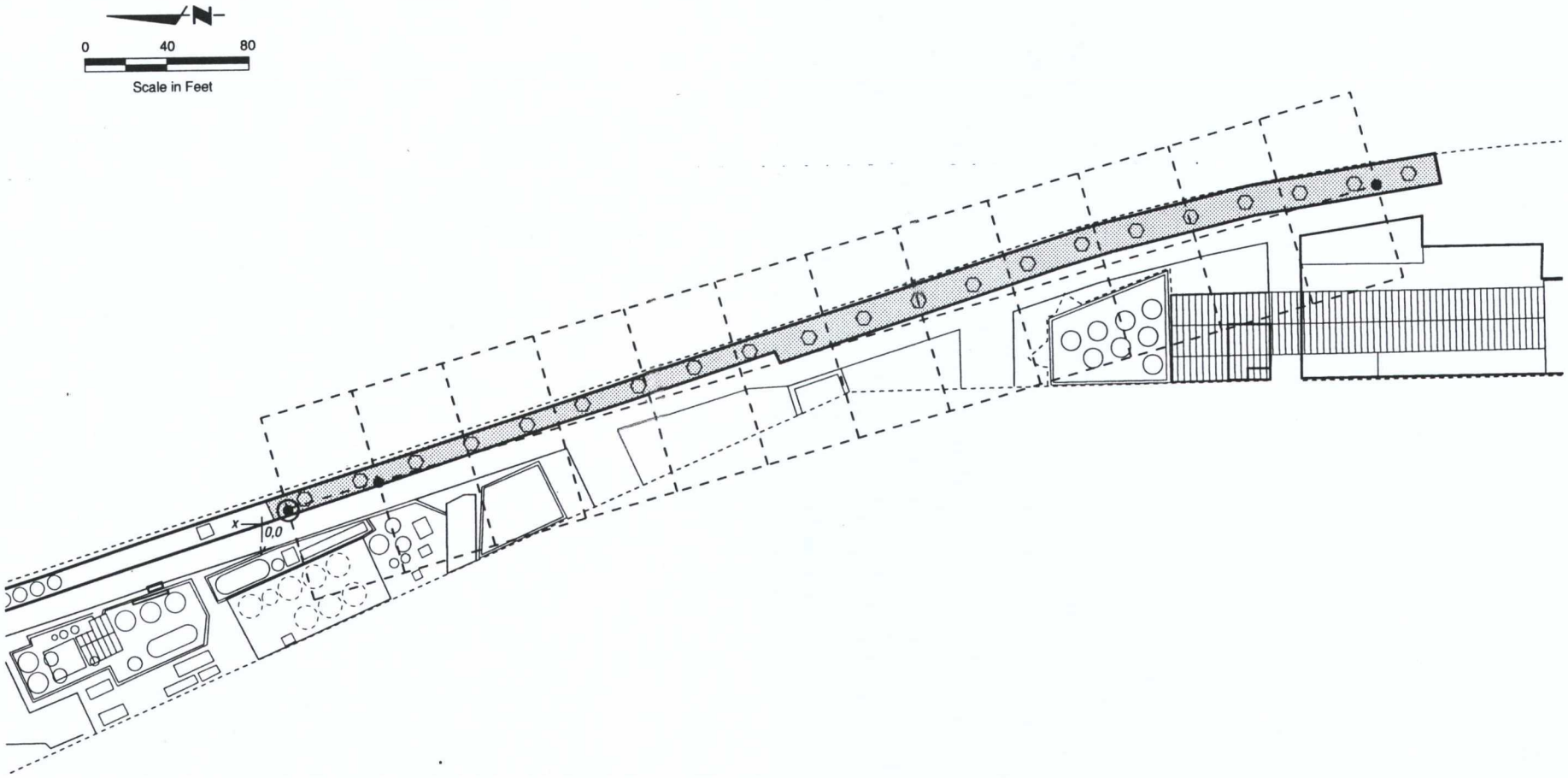


Figure A-4

Area 6 – Bulk Corrosive Base Storage Area

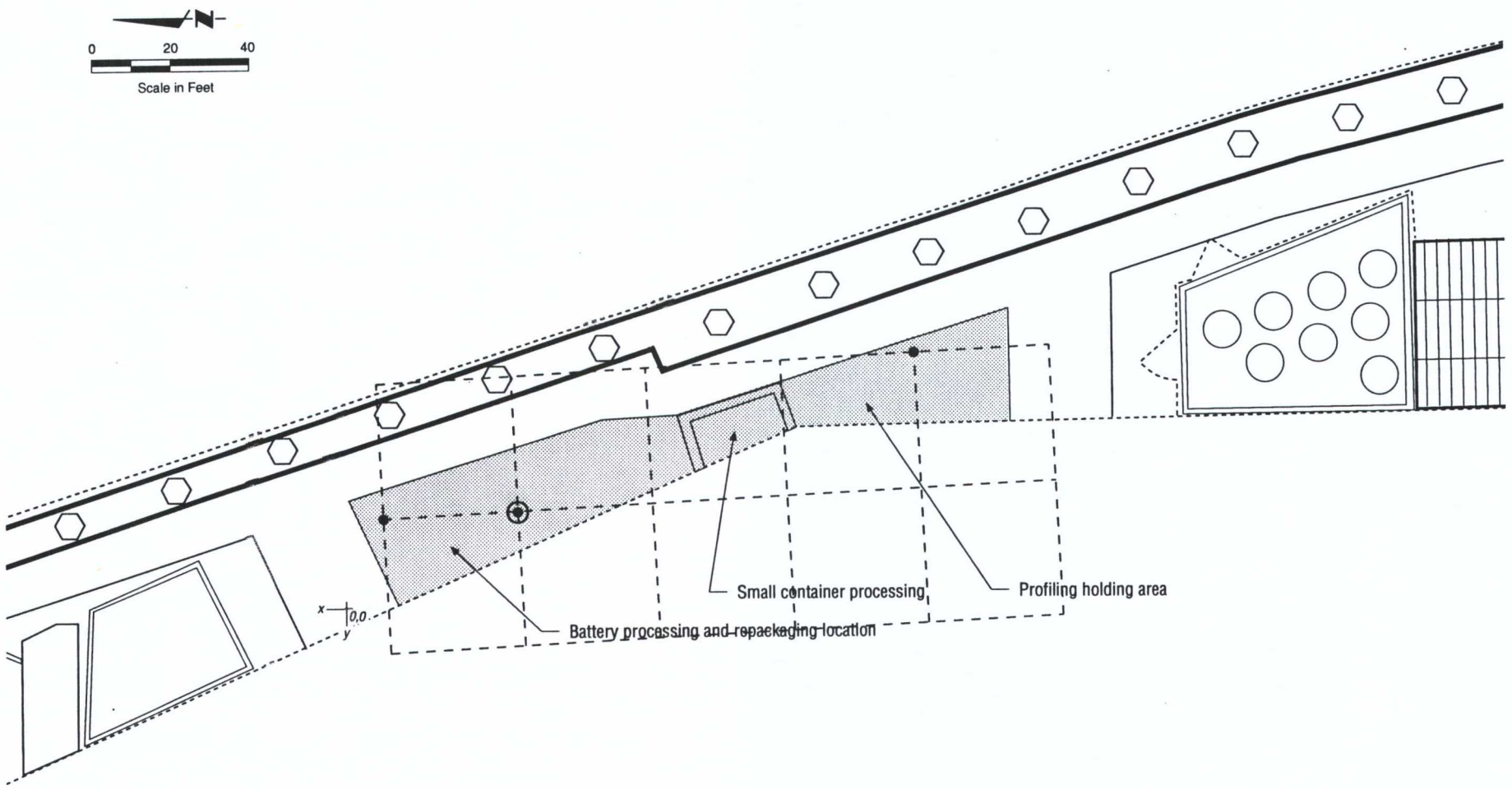
NPE35409.03 / A-5 Area 8 / CJS



Sample Area
Sample Location
Random Starting Point

Area in Square Feet: **6,361 ft²**
Random Starting Coordinates: **x = 12 ft, y = 7 ft**
Angle of Grid Rotation: **344°**
Grid Interval: **46'**

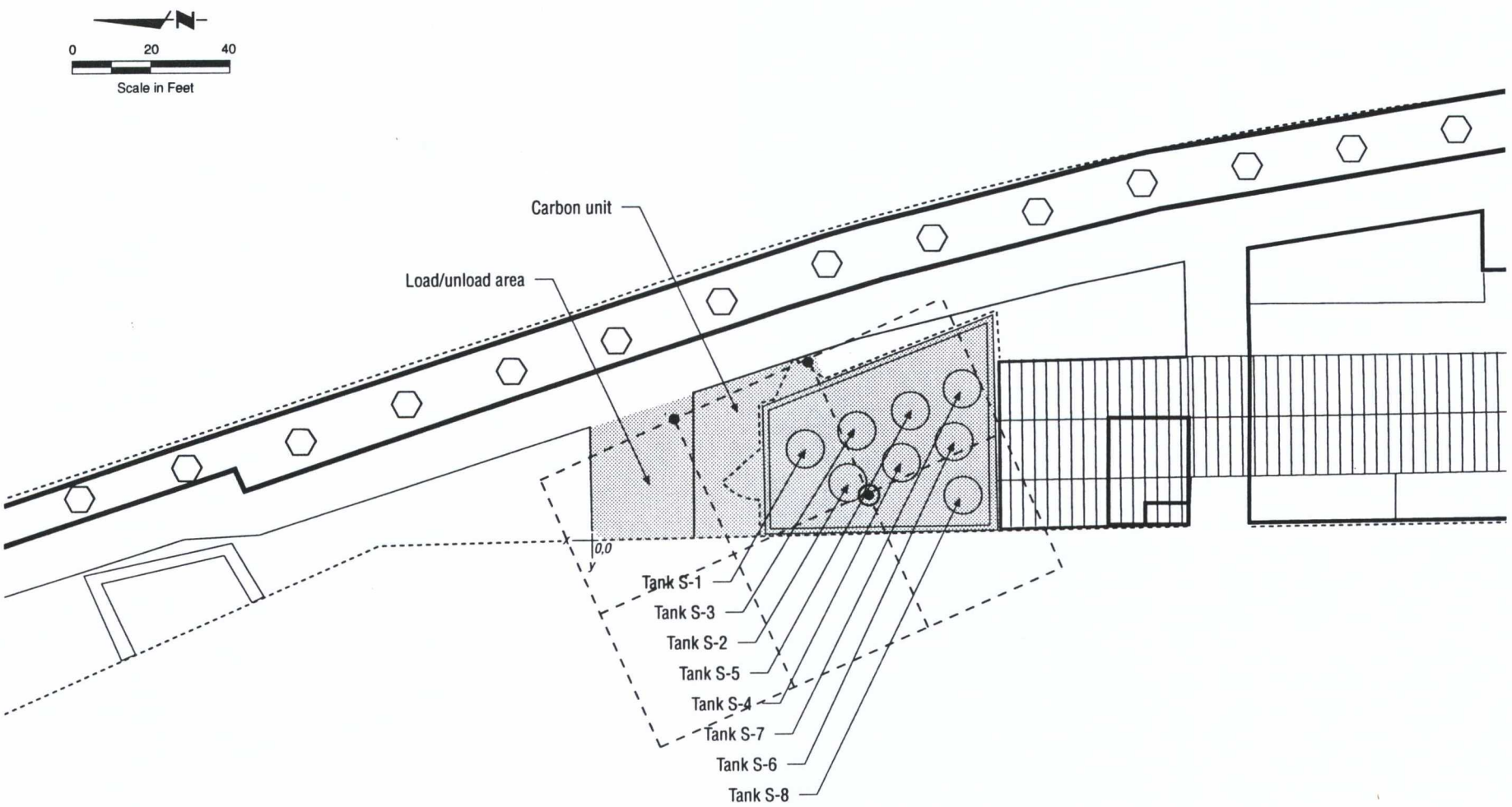
Figure A-5
Area 8 – Container Storage Area



Sample Area
Sample Location
Random Starting Point

Area in Square Feet: **3,504 ft²**
Random Starting Coordinates: **x = 43 ft, y = 24 ft**
Angle of Grid Rotation: **357°**
Grid Interval: **34'**

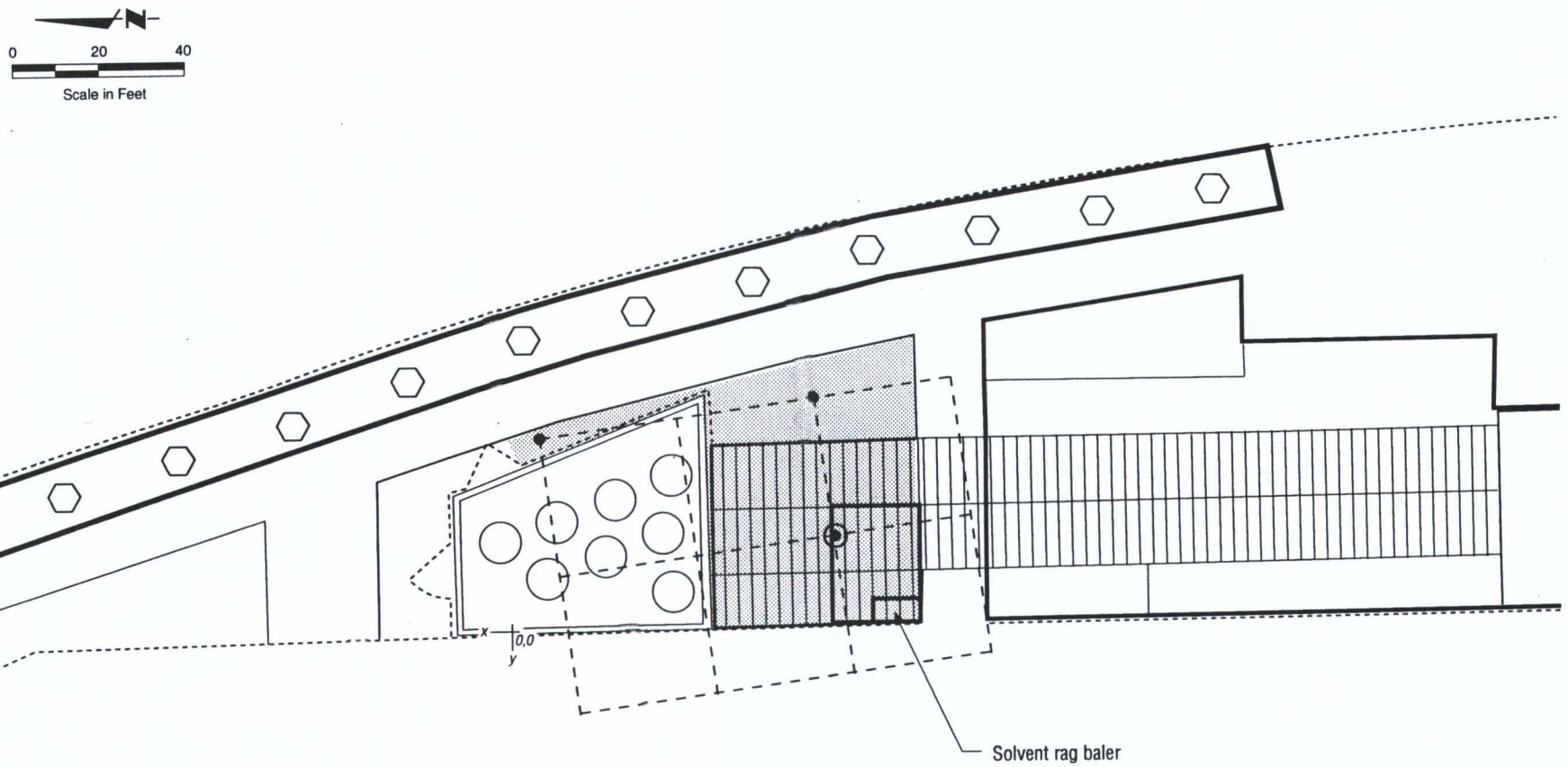
Figure A-6
Area 9 – Container Staging Area



Sample Area
Sample Location
Random Starting Point

Area in Square Feet: **4,144 ft²**
Random Starting Coordinates: **x = 50 ft, y = 12 ft**
Angle of Grid Rotation: **336°**
Grid Interval: **37'**

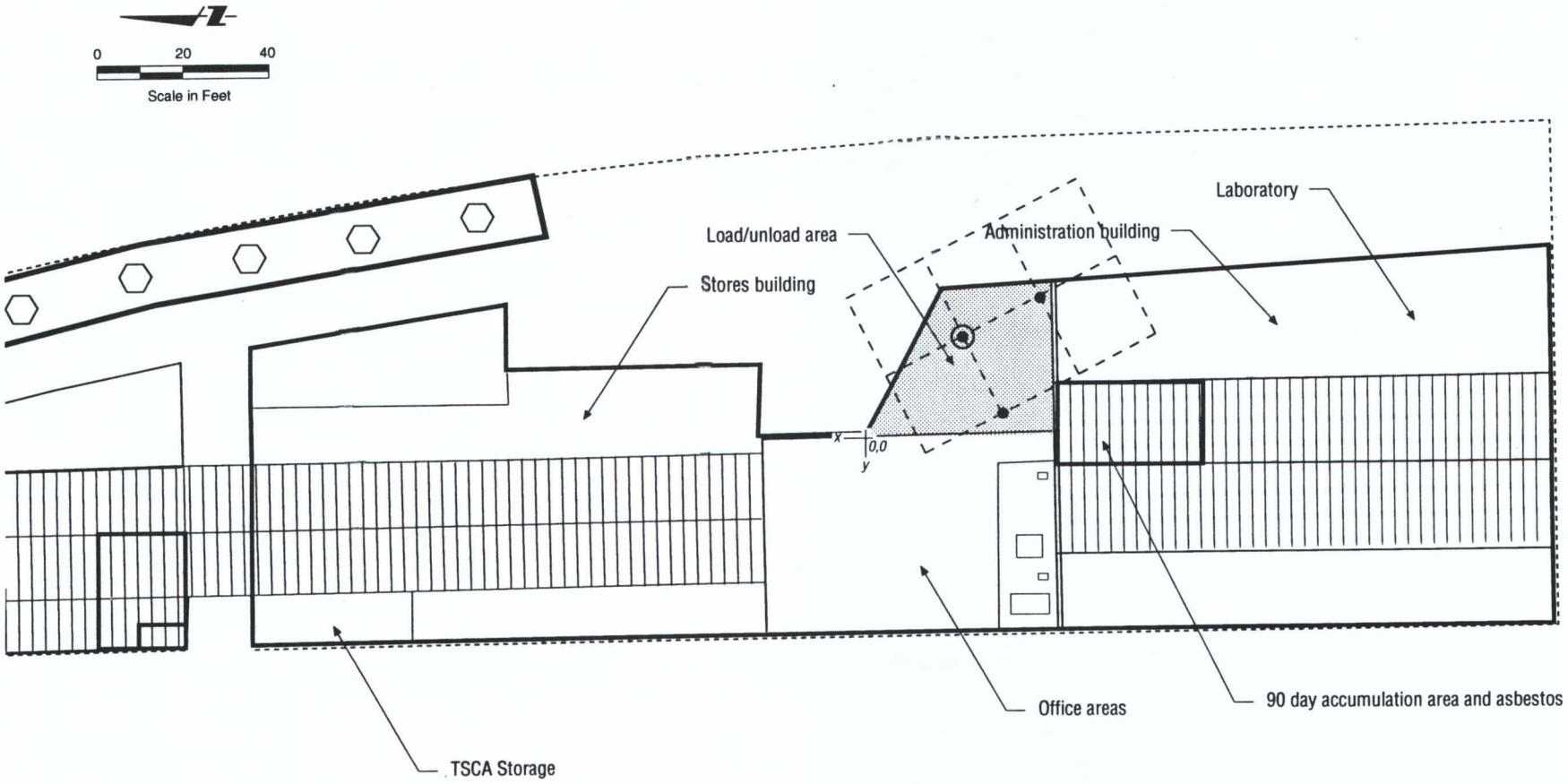
Figure A-7
Area 10 – South Tank Farm



Sample Area
Sample Location
Random Starting Point

Area in Square Feet: **3,168 ft²**
Random Starting Coordinates: **x = 75 ft, y = 21 ft**
Angle of Grid Rotation: **352°**
Grid Interval: **32'**

Figure A-8
Area 11 – Solids Energy Recovery Program Area



Sample Area
Sample Location
Random Starting Point

Area in Square Feet: **1,184 ft²**
Random Starting Coordinates: **x = 23 ft, y = 23 ft**
Angle of Grid Rotation: **333°**
Grid Interval: **20'**

Figure A-9
Area 12 – Administration and Stores Buildings Area

Table A-1
Summary of Proposed Sampling and Analysis Plan

Area	Item Description	Quantity	Analysis	Method
1	Decontamination water	1 grab sample per 10 drums or 1 grab sample per tank or 1 per tanker truck	Parameters per METRO discharge permit	SW-846 8240, 8270, 6010/7000, 1110, 9010, 9030; WTPH-418.1
	Concrete	3 samples	Volatiles, semi-volatiles, total metals, pH, sulfide, cyanide, total petroleum products	
2	Decontamination water	1 grab sample per 10 drums or 1 grab sample per tank or 1 per tanker truck	Parameters per METRO discharge permit	SW-846 8240, 8270, 6010/7000, WTPH-418.1
	Concrete	3 samples	Volatiles, semi-volatiles, total metals, total petroleum products	
5	Decontamination water	1 grab sample per 10 drums or 1 grab sample per tank or 1 per tanker truck	Parameters per METRO discharge permit	SW-846 8240, 8270, 8080, 6010/7000, 9010, 9030, 8150, 8140, 1110
	Concrete	3 samples	Appendix IX constituents, pH	
6	Decontamination water	1 grab sample per 10 drums or 1 grab sample per tank or 1 per tanker truck	Parameters per METRO discharge permit	SW-846 8240, 8270, 6010/7000 1110
	Concrete	3 samples	Volatiles, semi-volatiles, total metals, pH	

Table A-1
Summary of Proposed Sampling and Analysis Plan

Area	Item Description	Quantity	Analysis	Method
8	Decontamination water	1 grab sample per 10 drums or 1 grab sample per tank or 1 per tanker truck	Parameters per METRO discharge permit	SW-846 8240, 8270, 8080, 6010/7000, 9010, 9030, 8150, 8140
	Concrete-Flammable cell -Acids cell -Poison cell	3 samples	Appendix IX constituents	
9	Decontamination water	1 grab sample per 10 drums or 1 grab sample per tank or 1 per tanker truck	Parameters per METRO discharge permit	SW-846 8240, 8270, 8080, 6010/7000, 9010, 9030, 8150, 8140
	Concrete	3 samples	Appendix IX constituents	
10	Decontamination water	1 grab sample per 10 drums or 1 grab sample per tank or 1 per tanker truck	Parameters per METRO discharge permit	SW-846 8240, 8270, WTPH-418.1
	Concrete	3 samples	Volatiles, semi-volatiles, total petroleum products	
11	Decontamination water	1 grab sample per 10 drums or 1 grab sample per tank or 1 per tanker truck	Parameters per METRO discharge permit	SW-846 8240, 8270
	Concrete	3 samples	Volatile Semi-volatiles	
12 Loading Dock	Decontamination water	1 grab sample per 10 drums or 1 grab sample per tank or 1 per tanker truck		SW846 8240, 8270, 8080, 6010/7000, 9010, 9030, 8150, 8140
	Concrete	3 samples	Appendix IX constituents	
8, 12 TSCA Areas	Per Appendix 1B TSCA Closure Plan			

A3 Sampling Procedures

This section describes the procedures that NWES field personnel will use to conduct sampling.

After all dangerous waste management activities at the facility cease, closure will commence in accordance with the Closure Plan. Materials to be sampled will include:

- Washwater and rinsate generated during closure decontamination activities
- Concrete surfaces, containment sumps, and other structures

Descriptions of these materials and the sampling tool decontamination procedures are provided in the following subsections and Table A-2.

A3.1 Washwater and Rinsate Generated During Decontamination Activities

Washwater and rinsate generated during closure cleaning and decontamination activities will be collected in drums or possibly in a tank truck. Fluids from different sources will not be mixed until the analytical results have been received and evaluated by NWES. After this washwater is tested, it will be disposed of in NWES' wastewater treatment plant for discharge to Metro or will be sent offsite for appropriate disposal.

All drums containing washwater and rinsate generated during decontamination will be labeled with the following information:

- Process area
- Source of wastewater
- Date material was generated
- Percent solids/liquids

Drums will be marked "hold for analysis" pending laboratory analysis. Tank trucks will be sampled before they are emptied. One samples will be collected from each tank truck.

A3.2 Concrete Surfaces, Containment Sumps, and Other Structures

Samples of concrete surfaces, containment and sump systems, and other appropriate surfaces will be collected after they are decontaminated. Sampling will be accomplished by collecting concrete chips from the base of the structure to a depth of 1/2 inch. The samples to be analyzed will pass through a No. 4 sieve. The numbers and locations of concrete samples will be based on the biased and random approaches discussed in Section 2.0.

Table A-2
Washwater Rinsate, and Concrete Sampling Procedures

	Sampling Procedure
Decontamination washwater rinsate	• Positively identify the drum in question as a washwater or rinsate drum. Under no circumstances should any **unmarked** drums be opened by sampling personnel. • Carefully remove the drum bung. Splash and eye protection should be worn by sampling personnel. • Collect a representative sample of the drum contents using a drum thief. • Replace drum bung.
Concrete surfaces, sumps, and other structures	• Select an area at the base of the concrete structure that appears to be stained. If no stained area is present, select a representative portion of the structure. • Collect concrete chips from the selected area using a ballpeen hammer and a cold chisel. • Break the concrete chips down to a size that will pass through a No. 4 sieve (3/16 inch) using the hammer and chisel. • Collect concrete chips into an 8-ounce glass jar with a Teflon-lined lid. • If the structure to be sampled cannot be fractured to provide sample chips, a wipe-test sample should be collected following the procedures listed in Section 3.1, Reusable Equipment Sampling Procedure.
Asphalt	• Select an area that appears to be stained. • Use a coring device to collect a 6-inch-diameter core. • Using a hammer, break the core to a size that will pass through a No. 4 sieve (3/16 inch). • Collect the chips and aggregate into an 8-ounce glass jar with a Teflon-lined lid. • If the structure to be sampled cannot be fractured to provide sample chips, a wipe-test sample should be collected following the procedures listed in Section 3.1, Reusable Equipment Sampling Procedure.

If the analytical results indicate that performance standards have not been met as determined by NWES, a decision will be made either to decontaminate again using the same method or a more aggressive method (see Section 1.4.3 of the Closure Plan) or to cease the decontamination process and properly dispose of the material as summarized in Table 1-5 of the Closure Plan.

A3.3 Sample Containers, Preservation, and Holding Times

Table A-5 in Section A4, Methods of Analysis, presents the sample containers, preservation requirements, and holding times.

A3.4 Documentation and Field Observation

A3.4.1 Sample Identification and Labeling

All samples will be appropriately labeled for identification and tracking. Sample labels will be completed using waterproof-ink pens and affixed to containers at the time of sampling. The sample designation number contains identifiers that facilitate sample tracking.

The sample designation number will contain, at a minimum, the following identifiers.

- A__ = Area (number)
- Sample media:
  - W = washwater
  - C = concrete
- Sample number (three digits beginning with 001)

For example, the first concrete sample collected in Area 1 would be designated as A1-C-001.

Additional information included on the sample label will be the date and time the sample was collected, the analytical parameter(s), and the name(s) of personnel collecting the sample.

A3.4.2 Field Logbooks

The sampling team leader will maintain a field logbook that contains all information pertinent to the field sampling plan. The logbook will include at a minimum:

- Project name
- Project number
- Personnel
- Weather conditions

- Equipment calibration and decontamination
- Health and safety monitoring
- Photograph log (if photographs are taken)
- Sample data
  - Process area and location of sample
  - Date of sample collection
  - Time of sample collection
  - Type of samples taken
  - Sample identification numbers
  - Sampling method
- Personnel decontamination procedures

All members of the field team will use the notebook, make entries in ink, then initial and date each page.

A3.4.3 Corrections to Documentation

Unless prohibited by weather conditions, all entries in field and laboratory notebooks will be written in waterproof ink. No accountable serialized documents will be destroyed or thrown away, even when they are illegible or contain inaccuracies that require a replacement document. When an error is made on an accountable document, the person who made the error will make the correction by crossing a line through the error and entering the correct information. The erroneous information should not be obliterated. Any subsequent error discovered on an accountable document should be corrected by the person who made the entry. All corrections will be initialed and dated.

A3.4.4 Sample Chain of Custody and Shipment

The management of samples collected in the field involves specific procedures that must be followed to ensure field sample integrity and custody. The possession of samples must be traceable from the time they are collected through the time they are analyzed by the contract laboratory.

The chain of custody of a sample is defined by the following criteria:

- The sample is in a person's possession, or is in his/her view after being in his/her possession.

- The sample was in a person's possession and was locked up or transferred to a designated secure area by him/her.

Each time the samples change hands, both the sender and receiver will sign and date a chain-of-custody form and specify which item(s) has changed hands. When a sample shipment is sent to the laboratory, the top signature copy is enclosed in plastic with the sample documentation and secured to the inside of the sample shipment containers. The second

copy of the chain-of-custody form will be retained in the project files. A chain-of-custody record will be completed for each shipping container.

The following information is included on the chain-of-custody form:

- Sample number
- Signature of sampler
- Date and time of collection
- Place of collection
- Type of sample
- Number and type of container
- Inclusive dates of possession
- Signature of receiver

In addition to the labels, seals, and chain-of-custody form, other sample tracking components include the field logbook, sample request sheet, sample shipment receipt, and laboratory logbook.

Before packaging samples, field personnel will make certain that the exterior of the sample container is clean and that the sample label is legible.

A3.4.5 Sample Packaging

The sample packaging and shipping containers will be assembled and packed to meet the following requirements:

- There will be no release of materials to the environment.

- Inner containers that are breakable must be packaged to prevent breakage and leakage. Completed packages must be capable of withstanding a 4-foot drop on solid concrete in the position most likely to cause damage. The cushioning and absorbent material must not be reactive with the sample contents.

The packaging procedures will be in compliance with all U.S. Department of Transportation and commercial carrier regulations. Only waterproof ice chests or coolers will be considered acceptable shipping containers.

Samples for shipment will be packed using the following procedure:

- Seal the drain plug in the cooler.

- Place vermiculite or styrofoam peanuts in the bottom of the container.

- Wrap glass bottles with bubble wrap or styrofoam wrapping; place them inside Ziploc-type plastic bags and then place them in the cooler.

- Add ice in double-bagged Ziploc-type plastic bags.
- Fill with vermiculite, styrofoam peanuts, or bubble wrap.
- Place the shipping list chain-of-custody form in a plastic bag attached to the inside of the cooler lid.
- Attach two chain-of-custody seals (front and back of container) so that the seals must be broken if the cooler is opened.
- Place the name and address of the receiving laboratory in a position clearly visible on the outside of the cooler.
- Secure the lid with fiber tape.

All shipments for analysis will be transported directly to the laboratory or shipped to the laboratory via overnight courier. In either case, the laboratory will be notified immediately when samples are shipped.

A3.5 Field Quality Assurance/Quality Control (QA/QC) Samples

Samples will be placed in new sample bottles supplied by the laboratory contracted to do the analyses. The samples will be placed in a cooler immediately after collection and maintained at approximately 4°C.

Three types of field QA/QC samples are collected to document the accuracy and representativeness of the sample aliquots: field duplicate samples, equipment blank samples, and trip blank samples. Each of these sample types is described below.

A3.5.1 Field Duplicate Samples

Field duplicate samples will be collected at approximately 10 percent of the total number of sampling stations or one per batch. A field duplicate is obtained by collecting an additional set of bottle aliquots, at the same time, and with the same procedures as those used to collect the original sample. Field duplicate samples will be identified with the sample location number designation. For example, a field duplicate of the sample mentioned in Section A3.5.1, Sample Identification and Labeling, would be A1-C-002.

A3.5.2 Equipment Blank Samples

Equipment blank samples are organic-free water aliquots that are placed in contact with non-dedicated sampling equipment (e.g., split-spoons) after the equipment has been decontaminated using the proper decontamination procedures outlined in the sampling plan. The results from these samples are used to evaluate the integrity of the decontamination process, and to alert the field manager of possible cross-contamination of samples. A minimum of one equipment blank sample per day will be collected where nondedicated sampling

equipment is used. Equipment blanks will be identified with a letter designation with a sample location number, e.g., A1-C-003-EB.

A3.5.3 Trip Blank Samples

Trip blank samples are also organic-free aliquots used to evaluate possible cross-contamination of samples that may occur at any time during the sample bottle-handling history. The trip blank usually originates at the contract laboratory and accompanies delivery of the sample bottles to the facility. Trip blank bottles and sample analyses are usually limited to 40-ml VOAs and volatile organic analyses. Commonly, one trip blank is sent for each sampling event conducted.

sea1002891F.wp5

A4 Methods of Analysis

For each process area at the facility, the parameters of concern have been identified. These parameters serve as the basis for assigning analytical laboratory procedures. Parameters are selected on the basis of constituent presence in WAC 173-303-9905; 40 CFR Part 261 Appendix VIII inclusion of a waste in physical or chemical characteristics (ignitability, corrosivity, reactivity, or toxicity); or specific laboratory analyses for other primary waste constituents. The parameters of concern are grouped according to similar properties or constituent characteristics (e.g., volatile organics, metals, etc.).

For each parameter group, analytical methods are selected in accordance with Ecology's sampling and testing method requirements (WAC 173-303-110) and the EPA SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods laboratory manual. The analytical methods are summarized in Tables A-3 and A-4. Table A-5 provides a summary of the sample handling requirements based on the analytical methods.

Table A-3
Parameter Test Methods

Parameter	Test Method
Ignitability	Chemical testing methods specified in Washington State Dangerous Waste Regulations WAC 173-303-110 (WDOE 83-13, March 1984) or Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, Method 1010 or 1020.
Corrosivity	Chemical testing methods specified in Washington State Dangerous Waste Regulations WAC 173-303-110 (WDOE 83-13, March 1984) or Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, Method 9040, 9045, and 1110A.
Reactivity	Chemical testing methods specified in Washington State Dangerous Waste Regulations WAC 173-303-110 (WDOE 83-13, March 1984) or Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846 interim guidance for reactive cyanide and reactive sulfide, Methods 9010A and 9030A.
Toxicity Characteristic	Chemical testing methods specified in Washington State Dangerous Waste Regulations WAC 173-303-110 (WDOE 83-13, March 1984) or Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Toxicity characteristic leaching procedure (TCLP), SW-846, Method 1311. Note that leachate is analyzed by the appropriate methods to quantify TC constituents.
Constituent Analysis for Parameters of Concern (POCs)	EPA Methods for Analysis of Water and Waste, or Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846.

Table A-4
Parameters of Concern and Analytical Laboratory Methods

Parameters and Methods[a]
Volatile Organic Compounds by Method 8240 (SW-846)
• 1,1,1-Trichloroethane
• 1,1,2-Trichloroethane
• 2-Nitropropane
• Acetone
• Acetonitrile
• Acrylonitrile
• Benzene
• Carbon Tetrachloride
• Dichlorodifluoromethane
• Diethylene Ether (1,4-Dioxane)
• Isobutyl Alcohol
• Methyl Ethyl Ketone
• Methylene Chloride
• Tetrachloroethylene
• Toluene
• Trichloromonofluoromethane
• Trichloroethylene
• Xylene (Total)
• Trichlorotrifluoroethane
• Methyl Isobutyl Ketone
• Ethyl Acetate
Semivolatile Organic Compounds by Method 8250 or 8270 (SW-846)
• Diethylhexyl Phthalate
• Diethanolamine
• Dibutylphenol Ester
• P-Cresol
• Butyl Cellosolve
• Methyl Cellosolve
• Ethylene Glycol
• Tributyl Ester
• Di-tertbutyl-p-cresol
• Methyl-2, 4-Pentanediol
• Perchloropentacyclodecane
• Bisphenol A

Table A-4
Parameters of Concern and Analytical Laboratory Methods

Parameters and Methods[a]
Semivolatile Organic Compounds by Method 8250 or 8270 (SW-846) (continued)
• Polypropylene Glycol
• Polyglycol Bis-propylamine
• Naphthalene
Metals by Method 6010 or the AA-7000 Series (SW-846)
• Aluminum
• Antimony
• Arsenic
• Barium
• Cadmium
• Chromium
• Cobalt
• Lead
• Magnesium
• Mercury
• Molybdenum
• Nickel
• Selenium
• Silver
• Strontium
Petroleum by Method WTPH 418.1
Total Cyanide by Method 9010 (SW-846)
• Cyanide
PCBs by Method 8080 (SW-846)
• Total PCBs
Organophosphorus Pesticides by Method 8140 (SW-846)
Chlorinated Herbicides by Method 8150 (SW-846)
• (Analyzed only if the waste stream is known or is suspected to contain parameters)
Sulfide by Method 9030 (SW-846)
• Sulfide

Table A-4
Parameters of Concern and Analytical Laboratory Methods

Parameters and Methods[a]
Corrosivity by Method 1110 (SW-846)
• pH

[a]SW-846 = Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition.
EPA = Methods for Analysis of Waters and Waste. These methods are designed for water, so the detection limited is dependent on the laboratory preparation method.

Table A-5
Sample Parameters, Analytical Methods, Containers, Sample Preservation, and Holding Times

Sample Parameter	EPA Method	Container	Preservation	Holding Time
Volatile Organics	8240 (SW-846)	One 4-ounce glass Teflon-lined lid	4°C	14 days
Semivolatile Organics	8250 or 8270 (SW-846)	One 8-ounce glass Teflon-lined lid	4°C	7 days for extraction, 40 days after for analysis
Metals	6010 (SW-846)		4°C	6 months Hg, 28 days CN, 14 days
Total Petroleum and Fuel Hydrocarbons (TPH)	WTPH 418.1[a] WTPH-D WTPH-G		4°C	1 month
PCBs	8080 (SW-846)	One 4-ounce glass Teflon-lined lid	4°C	14 days until extraction 40 days after for analysis
Total Cyanide	9010 (SW-846)	One 8-ounce glass Teflon-lined lid	4°C	NA
Organophosphorus Pesticides	8140	One 4-ounce glass Teflon-lined lid	4°C	14 days until extraction 40 days after for analysis
Chlorinated Herbicides	8150	One 4-ounce glass Teflon-lined lid	4°C	14 days until extraction 40 days after for analysis
Sulfide	9030	4-ounce plastic	4°C	NA
Corrosivity	1110	4-ounce jar	4°C	14 days

[a]Washington State Department of Ecology required and recommended analyses for Petroleum Substances (April 1992).

sea10028920.wp5

A5 Management of Sampling-Derived Waste

Disposable materials generated during the sampling activities (Tyvek, booties, gloves, etc.) will be handled in a manner consistent with the protocols set forth by NWES personnel. The contents should be labeled on the side of the drum and stored onsite. They will be stored onsite for less than 90 days in designated waste accumulation areas. Handling, shipment, and disposal will be commensurate with the analysis results and WAC 173-303 requirements.

Barrels will be marked "hold for analysis" if laboratory analysis is being performed. They will be stored onsite for less than 90 days in designated waste accumulation areas. Handling, shipment, and disposal will be commensurate with the analysis results and WAC 173-303 requirements as well as with any protocol set forth by NWES personnel.

sea10028924.wp5

A6 References

U.S. Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods.* USEPA SW-846, Third Edition. 1986.

U.S. Environmental Protection Agency. *Statistical Methods for Evaluating the Attainment of Superfund Cleanup Standards.* Volume 1, Soils and Solids Media. 1988.

Conover, W. J. *Practical Nonparametric Statistics*, 2nd edition. New York: John Wiley & Sons. 1980.

sea10028925.wp5

Appendix 1B
TSCA Closure Plan

Revision #1—December 30, 1994

SECTION 8.0

TSCA CLOSURE PLAN

40 CFR Ch 1. Part 761.65

NORTHWEST ENVIROSERVICE, INC.

CLOSURE PLAN

TSCA APPLICATION

8.0 CLOSURE PLAN

This closure plan identifies all steps necessary to close those portions of NWES' facility utilized in the management and/or storage of PCBs and PCB items as defined under 40 CFR Chapter 1, Part 761.3. This plan addresses the conditions under which final closure will occur, as well as when partial closure may occur. The standards to which closure must be completed is also discussed.

8.1 PARTIAL AND FINAL CLOSURE ACTIVITIES

Partial closure of any portion of the facility is not planned. Because Northwest EnviroService operates as both an RCRA treatment and storage facility and a TSCA storage facility, it is possible that one aspect of the facility's operations will undergo closure while other aspects remain operational. For example, TSCA closure may be required when closure under RCRA is not yet required.

However, in the event that future circumstances or decisions force discontinuation of PCB-related storage, NWES will undertake partial closure actions without delay. In this case, partial closure under TSCA will occur for all areas *solely* involved in PCB activities. Closure of "dual" or shared areas, where both RCRA and TSCA wastes are managed, will occur during RCRA closure. Financial assurance for complete TSCA closure will continue until certification of

total closure is provided and accepted by Washington Department of Ecology (WDOE) and the U.S. Environmental Protection Agency (EPA).

TSCA closure activities will begin within 30 days after the date on which NWES receives its final quantities of PCB waste and, if a partial closure, shall be completed for TSCA-use-only areas within 180 days after that date. As stated above, complete TSCA closure will be performed concurrently with RCRA closure for dual use areas.

Northwest EnviroService will maintain an on-site copy of the approved RCRA/TSCA closure plan and all revisions to the plan until certification of closure completeness has been submitted and accepted by the EPA/WDOE. Any modifications to equipment, facility structures, instruments or procedures related to the management and storage of PCB items will result in Northwest EnviroService updating and revising this closure plan accordingly.

The facility owner will notify EPA at least 60 days prior to the date closure of the TSCA portion of the facility is expected to begin. Upon completion of TSCA/RCRA closure, both the Northwest EnviroService owner and a local, independent, registered, professional engineer will submit to EPA/WDOE a certification that the TSCA areas have been closed in accordance to the specifications of the approved closure plan.

8.2 CLOSURE PERFORMANCE STANDARD

This closure plan is designed to ensure the TSCA portion of the facility requires no post-closure maintenance and controls; eliminates threats to human health and the environment; and avoids release of PCB waste to the ground or surface wastes or to the atmosphere.

The area surrounding the facility is an industrial area and post-closure use of the property will most likely entail industrial activity. Upon total closure of the facility's RCRA activities, which may occur simultaneously with or after TSCA closure, the facility may be sold. Verification of decontamination will be made as described in the Midwest Research Institute's "Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup".

8.3 MAXIMUM WASTE INVENTORY

A detailed description of Northwest EnviroService's maximum storage operation is provided in the RCRA/TSCA closure plan (Section 11) of our RCRA Part B permit application. The maximum storage operation for PCB waste is 94 drums. Additionally, in accordance with 40 CFR Chapter 1, Part 761.65 (c)(2), some drained, undamaged electrical equipment or other large PCB-contaminated materials may be stored in DOT-approved containment boxes outside the TSCA storage area.

Licensed disposal firms, such as ESI or Aptus (please see Attachment 1), will be contracted for appropriate disposal (incineration or landfilling) of any PCB-contaminated wastes, such as diesel, rags and other debris, that are generated by Northwest EnviroService during the closure process.

8.4 MAXIMUM PCB INVENTORY/CLOSURE

The maximum inventory of PCBs and PCB items that could be handled at one time at Northwest EnviroService's facility is 94 55-gallon drums plus two 20-cubic yard capacity drop boxes. Northwest EnviroService intends to remove all wastes from storage and transport them to a final disposal site prior to the initiation of any closure activities. These wastes will be transported by either Northwest EnviroService or a permitted subcontractor to one of the licensed final disposal facilities listed on Attachment 1 of this section.

If Northwest EnviroService cannot arrange for the proper transportation and disposal of the full inventory of PCB wastes prior to the initiation of closure, the following steps will be utilized by Northwest EnviroService, or may be employed by a third party, to remove, transport and dispose of PCB wastes during closure:

1. Inventory the wastes to determine the amount of materials requiring transportation and disposal. Perform visual inspections of the waste containers to ensure readiness for transportation in accordance with applicable DOT standards.

2. Contact one of the final disposal facilities listed on Attachment 1 to schedule the waste for disposal as appropriate (≥50 ppm: TSCA-approved incinerator/landfill), based on information recorded on each container or the waste records. If the records are lost or not obtainable, each container or PCB item must be sampled to determine the contamination levels for PCBs.

3. If Northwest EnviroService cannot provide transportation for the waste to the final disposal facility, and if the final disposal facility cannot provide transportation for the waste, then an approved TSCA transporter must be scheduled to pick up and transport the waste to the final disposal facility. Please see Attachment 2 for a list of transporters available.

8.5 PCB MANAGEMENT AREAS CLOSURE - GENERAL METHODS

Northwest EnviroService does not expect to find any PCB contamination in its storage area. However, closure activities for the PCB storage area will be carried out in a manner that

eliminates the potential for release of PCBs to the environment in post-closure status. These methods will include, if determined through sampling to be necessary, the thorough decontamination of both high-contact and low-contact areas to 10 micrograms per 100 square centimeters or less.

The independent professional engineer will follow the closure plan as outlined in the RCRA/TSCA Closure Plan (Section 11). All observations relevant to the closure process under TSCA will be annotated in the facility operations log book on a daily record and will include the following:

1. Sample protocols
2. Laboratory results on samples prior to certifying as "clean"
3. If decontamination is necessary, the type of decontamination solvent used
4. Number of rinses observed

Protective Equipment for Personnel

The work will be supervised and performed using NWES personnel. Personnel will be equipped with PCB/acid/solvent resistant coveralls (olefin material, coated with heavy polyethylene film), head protection, neoprene-coated gloves, and boots resistant to solvents and acids. Both the wrists and ankles will be taped with duct tape to protect against upward and inward splash. Full face

respirators with organic vapor and acid gases filter cartridges that seal directly to the mask will be used.

Removal

If sample analyses indicate that equipment, walls, ceilings, structural building components, floors, roadways, etc., including a one-foot buffer zone outside the storage area are contaminated with PCBs above the clean-up level, the affected items/areas will be double washed/double rinsed with an appropriate solvent in which PCBs are at least 5% soluble. Sufficient volume of solvent will be used to completely cover the contaminated surface. Solvent runoff will be controlled and collected for proper disposal.

Decontamination will be methodically carried out to ensure equipment or personnel do not inadvertently re-contaminate areas that are verified as clean. Decontamination of the storage areas will be verified by use of the sampling scheme developed by the Midwest Research Institute, as provided in the "Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup" . Future risk to the environment will be negated through complete and total removal of PCBs to those levels outlined in spill cleanup policy.

Storage

Collected PCB-contaminated solvents, wipes, rags and other debris will be drummed, appropriately dated and labeled, and temporarily

stored in that portion of the TSCA storage area that has yet not been closed. After the entire TSCA storage area is closed the waste generated from sampling and/or decontamination will be temporarily stored in a compatible RCRA storage area until it can be manifested and transported to a final disposal facility (see Attachment 1).

Transportation and Disposal

As soon as possible, and before 120 days after closure has been initiated, the waste will be transported by either Northwest EnviroService or a suitable subcontractor to one of the licensed final disposal facilities listed on Attachment 1 of this section.

8.6 CONTAINMENT SYSTEM/ROADWAY SAMPLING AND DECONTAMINATION PROCEDURES

The closure process for the 10-gage, mild steel-lined PCB storage area and sole-use concrete roadway will consist of the following: 1) an initial visual inspection, followed by; 2) presampling cleaning with appropriate solvent; 3) surface sampling, and 4) sample analysis. These steps will be performed in accordance with the definitions provided in 40 CFR 1, Part 761.123.

The visual inspection will determine any preparatory work necessary prior to sampling. The PCB storage area and sole-use roadway will be visually inspected and any open cracks and openings will be

recorded for further reference during sampling procedures. These cracks will be filled prior to the rinsing procedure with a sealer that is water and solvent resistant.

Surface sampling (one sample per 100 square feet) will consist of chips taken from the surface of the concrete beneath the steel containment system. Surface samples from the sole-use roadway (which measures 2, 145 square feet) will be taken from two randomly selected 20 square foot grids. Samples will be generated by chipping to one-half inch in depth with a chisel and hammer. Chip samples will not be taken from the 10-gage mild steel secondary containment liner in the storage area; instead, wipe tests in a one-foot by one-foot grid will be taken.

Should sample analyses indicate contamination of the secondary containment system or the PCB-only use roadway, decontamination of these areas will depend upon the quantity of PCBs present and the type of closure being performed (partial or complete).

If PCBs are detected and are below clean-up limits, and concrete removal is not planned, an evaluation will be completed according to health and environmental limits defined in 40 CFR Ch.1 Part 761.120. If PCBs are detected and are below clean-up limits, and concrete removal is planned, it will be disposed of at a TSCA disposal facility.

8.7 SOIL SAMPLING

As the Northwest EnviroService facility is completely paved the possibility of soil becoming contaminated with PCBs is extremely low. However, should chip sample analyses indicate the potential for PCB soil contamination, soil sampling will be performed for the appropriate PCB storage or roadway areas indicated, as well as on soil outside the facility to determine background levels. Soil sampling will be performed using 1 and 1/2 inch diameter split spoon (Method 4-4 EPA Soil Sampling Methodology Course, 1987). Site samples, when possible, will be taken from the same locations as containment surface samples. Sampling will be accomplished through holes bored in the overlying concrete so as not to disturb the underlying soil.

For soil underneath the containment unit, Northwest EnviroService will take a minimum of one sample every one hundred square feet to ensure any contamination is detected. A minimum of five background samples will be taken at the time of closure and/or existing background data will be used. Background samples will be taken at a depth of six inches.

Discrete background sample locations will be separated by a minimum of 20 feet. Samples will be taken from areas within 500 yards of the facility boundary. The attempt will be made to sample from all

adjacent property sides to establish any possible concentration gradients. The sample grid coordinate system and random 20-by-20 foot grid unit selection process will be used for background sampling.

Background Sample Integrity Assessment

The mean of the closest four samples will be compared to the value of the outlier. If the outlier is within four standard deviation it will be included. If not, another sample will be taken. This process will be repeated until five representative samples are taken. The natural logarithm of each metal analytical value will be utilized.

Comparison to Background Values

The mean of the background levels will be compared to the site sample. If the site sample value is within the background mean plus two standard deviations, the site will be considered clean for PCBs.

Procedures When Background Levels are Exceeded

If at the time of closure PCB waste or waste residues remain on site which are attributable to facility operation, a post-closure plan will be developed and submitted to the EPA within 90 days.

If after completion of the closure plan, contaminants are present at levels above detection but below clean-up levels and are attributed to facility operation, a risk assessment proposal will be developed.

8.8 ADDITIONAL CLOSURE ACTIVITIES

The following additional closure activities will be performed to ensure any post-closure releases of PCBs will not present unreasonable risks to human health and the environment.

Groundwater Monitoring

Groundwater monitoring for PCBs will only occur if soil samples are found to be contaminated.

Run-on and Run-off control

As the storage facility is completely enclosed within the basement of a building, run-on/run-off control is not a factor at the storage area. Run-on and run-off control for the loading areas and the roadway areas is provided through directional flow (slopes/berms) of rainwater or other liquids to the water treatment system. No water runs on or off the Northwest EnviroService facility without being treated.

Facility Security

Facility security is maintained through six-foot fencing with additional three-foot wire barriers on top and locking gates installed around the entire perimeter of the facility. Warning signs and signs labeling the site as a hazardous waste treatment, storage and disposal facility are posted on all gates. Security guards are employed during off hours to ensure non-qualified personnel do not enter the facility at any time.

These security measures will be continued during the partial TSCA closure process and until RCRA closure is certified as complete and accepted by the EPA/WDOE.

8.9 CLOSURE SCHEDULE

The closure plan for the PCB materials storage area will be completed within 180 days of receiving the final quantity of PCB waste for storage. The removal and disposal of the final inventory will be completed within 60 days of receipt and the sampling and decontamination processes will begin. Regular weekly inspections of the PCB storage area will continue until partial closure is certified.

The closure process, including sampling, sample analyses and, if required, decontamination of the drum storage area, will begin

after removal of PCB waste and will be completed within 60 days. If necessary, the decontamination of secondary containment will follow and will be completed within 70 days. Removal and disposal of wash solvent, rags and other debris will occur within 80 days.

Chip sampling of secondary containment areas will occur within 130 days. The analytical phase will begin and, depending upon results, may necessitate further sampling (e.g., soil), testing and removal of PCB contamination from these areas. It is not anticipated that any equipment will require dismantling or scrapping; any affected items will be thoroughly decontaminated within 130 days. No tanks are involved in the storage and management of PCBs or PCB items at Northwest EnviroService, and therefore will not be part of the closure covered under this plan.

TSCA Closure Plan
Attachment 1

Licensed TSD facilities available to provide final disposal of PCB articles and PCB items stored or generated by Northwest EnviroService, Inc. during its TSCA closure activities:

Aptus	Incinerator, Chemical Detoxification P.O. Box 1328/Highway 160 North Coffeyville, KS 67337 KSD981506025 (800) 292-2558
Chemical Waste Management of the Northwest	Landfill Star Route Box 9 Arlington, OR 97812 ORD089452353 (503) 454-2643
Envirosafe Services of Idaho	Landfill 10.5 Miles NW of Grandview Grandview, ID 83624 IDD073114654 (800) 274-1516
U.S. Ecology	Landfill Highway 95 12 Miles South of Beatty, NV 89003 NVT330010000 (702) 553-2203
CWM Chemical Services, Inc.	Incinerator Hwy. 73 (3.5 miles east of Taylor's Bayou) Port Arthur, TX 77640 TXD000838896 (409) 736-2821

APTUS	Incinerator 11600 North Aptus Road Aragonite, UT 84029 UTD981552177 (801) 521-9040
U.S.P.C.I.	Landfill/Chemical Detoxification 3 Miles E., 7 Miles N. of Exit 41, I-80 Clive, UT UTD991301748 (801) 534-0054

TSCA Closure Plan
Attachment 2

Licensed Transporters available to transport PCBs and PCB items stored or generated by Northwest EnviroService during its TSCA closure activities:

Burlington Northern Railroad Co.
3700 Continental Plaza
Fort Worth, TX 76102
MND 048 341 788

DART Trucking Co.
P.O. Box 89
Canfield, OH 44406
OHO 009 865 825

Missouri Pacific Truck Lines
P.O. Box 14652 M
St. Louis, MO 63195
MOD 008 908 816

Missouri Pacific Railroad Co.
P.O. Box 14652 M
St. Louis, MO 63195
MOD 006 968 101

Tri-State Motor Transit Co.
P.O. Box 113
Joplin, MO 64802
MOD 095 038 998

Union Pacific Railroad Co.
1416 Dodge Street
Omaha, NE 68179
NED 001 792 910

Union Pacific Motor Freight
1416 Dodge Street
Omaha, NE 68179
NED 008 910 754

U.S. Pollution Control, Inc.
8960 North Highway 40
Lake Point, UT 84074
UTD 980 635 890

Northwest EnviroService, Inc.
1700 Airport Way South
Seattle, WA 98134
WAD 058 367 152